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ABSTRACT

This book provides a review of literature and discussion of theory and practice focuses on the value of linguistic interactivity (dialogism) in technology-based instruction, particularly in the fields of second language instruction and cross-cultural communication. The bulk of the document discusses theory concerning dialogue, dialogism, dialogicity, and aspects of computer-mediated communication and instruction, and draws conclusions about the relationship of dialogism, technology, and the teaching-learning process. A research project is then briefly reported, aimed at improving eighth-grade language students' metacognition concerning their computer literacy. (Contains 147 references.) (MSE)

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Publications 7

Seppo Tella &
Marja Mononen-Aaltonen

Developing Dialogic Communication Culture in Media Education

Integrating Dialogism and Technology

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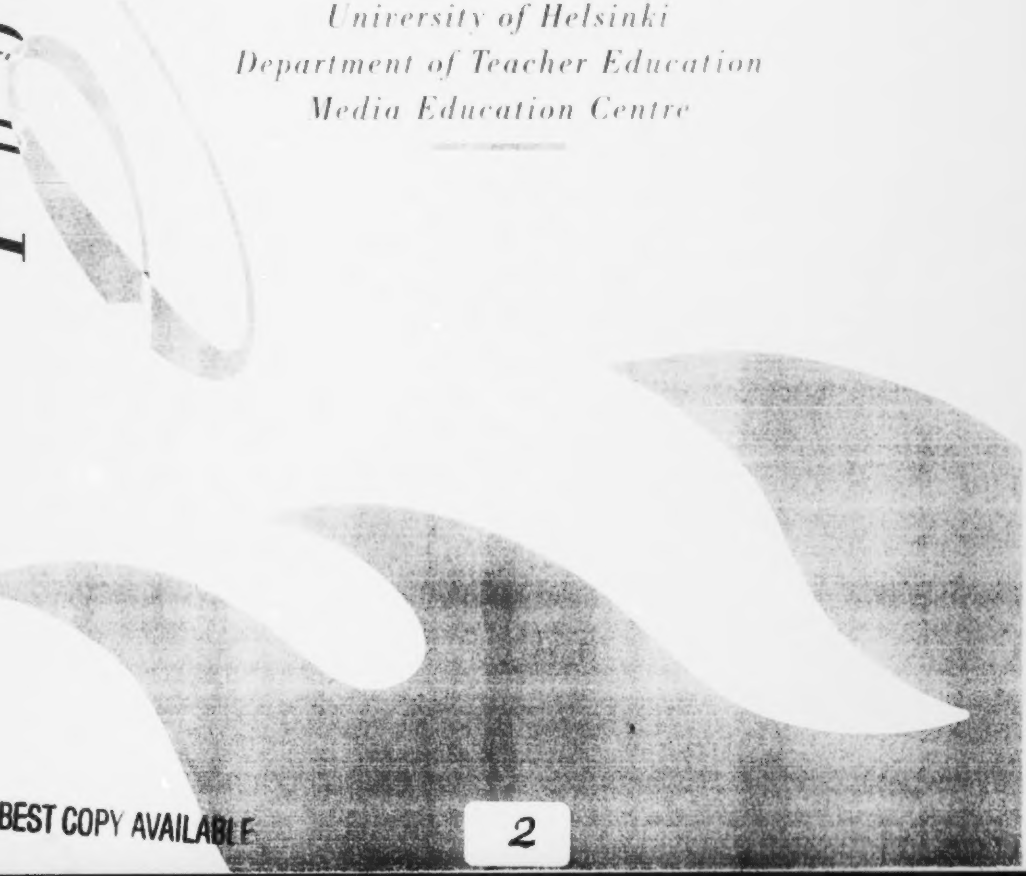

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Seppo Tella &
Marja Mononen-Aaltonen

Developing Dialogic Communication Culture in Media Education

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Preface

Background to the Series

Media Education Publications of the Media Education Centre, Department of Teacher Education, is the continuation of an earlier series called **OLE Publications**, created in late 1995. Its purpose was to provide a forum for teachers and researchers to publish articles in English, French or German on themes and topics connected to two European Union-based open and distance learning (ODL) projects, coordinated by the Department of Teacher Education, University of Helsinki. The two projects were **the OLE Project** (Open and Distance Learning in Teacher Education to Promote the European Dimension; 1995–1997, and **the APPLAUD Project**[1] (A Programme for People to Learn At University-level at a Distance; 1996–1998).

The Media Education Publications series consists of articles dealing with media education, modern information and communication technologies (MICT), telematics, computer-mediated human communication (CMHC), distance education (DE), open and distance learning (ODL), flexible learning (FL), dialogic communication, and comparative education with a special view to the European dimension.

Background to the Present Volume

The original idea to do research on dialogism was born many years ago. The first discussions, initiated by **Marja Mononen-Aaltonen**, took place in 1995 in Bulgaria. A Finnish team of several educational experts were carrying out a World Bank-financed project directed by **Seppo Tella**, in order to upgrade foreign language teaching and training in that country. When the Media Education Centre was established in August 1996, it gradually became clear to us that these two themes, dialogism and media education, shared a number of issues that were intertwined in a most challenging way. This publication grew out of our mutual interest to look into some theoretical aspects of these two areas, with a special emphasis on teacher education, foreign language education, and modern information and communication technologies.

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[1] The APPLAUD project is documented on the following Web page: http://www.helsinki.fi/kasv/media/projects/applaud/applaud.html.

Once we had the general structure of the study outlined, we noticed that there was an enormous interest in Vygotskyan ideas, especially in his Zone of Proximal Development, but also in other philosophers and theorists discussed in this study, especially in Bakhtin and Kramsch. We have found it most challenging to integrate ideas originated in the Russian philosophy with Western theories and interpretations, in a context that covers a number of areas from philosophy, literature, education, technology and communication. We believe that this kind of integration is necessary in order to contribute to the theoretical basis of telelogically defined media education (cf. Tella 1997).

There is one feature that makes this study different from everything else we have written before. We had wide and intense access to the World Wide Web in order to find out what sort of articles and data we could gather through this new media we were about to study, as part of the whole research design. To our positive surprise, we found many interesting research findings related to the dialogic aspect of this study. Naturally, we also realised the uneven and unbalanced quality of the writings we could access through the web. One of the technical problems was connected to the way of indicating the web-based references. We were not the first to trip over this issue. Jones (1997), for instance wrote as follows:

> "The Web is problematic, for it at once provides connection, but it does not provide archiving. Scholars ... are, for instance, grappling with the difficulties of a medium that does not readily pro-

> vide them with a means of citation. How do we maintain the associations that a citation system provides?" (Jones 1997, 28)

We have adopted a very brief way of indicating these sources in our References list. We were also unanimous about indicating the date when the data was browsed, as it is a well-known fact that web pages come and go and tomorrow you might not find the page you cited yesterday. In order to be on the safe side, we also printed all the web pages we make references to in this publication.

Why is dialogue and dialogism so important then? In our opinion, Isaacs (1996) points to one of the essential criteria when he argues that

> "[dialogue] is iconoclastic … in its continuous invitation to people to live from present experience, not from memory." (Isaacs 1996, 27)

In the same spirit, Kitaigorodskaya (1992, 63–65) contends that dialogue is a tool for satisfying the spiritual needs of the individual for the other. Dialogue is always geared towards another human being. In dialogue, a human being is no longer a tool but the aim. A teaching–learning process based on dialogue gives one a chance to meet another person on an equal basis.

• •

The division of labour between the two authors of this book took place along the following lines:

The need for writing about dialogism in media education and foreign language education was first expressed by Marja Mononen-Aaltonen. The general structure of this publication was originally co-authored by Tella and Mononen-Aaltonen and further elaborated by Tella.

Chapters 1, 6, 7, 8, and 9 were co-authored. Chapters 2 and 5 were based on Tella's previous research on the communication channels, but were elaborated and redesigned for the purposes of this publication.

Chapters 3 and 4 were based on Mononen-Aaltonen's original ideas but enlarged through various processes of co-authoring. Mononen-Aaltonen's special contributions focused on understanding and interpreting the Russian language original writings and the Soviet Union-based background of the Russian philosophers discussed in this publication.

On the whole, this study is a product of fruitful co-authoring which made extensive use of both human-to-human communication (HHC) and computer-mediated human communication (CMHC) tools, such as the World Wide Web, e-mail, and groupware functions of the word-processors, as explained in this publication. We are of the opinion that co-authoring is an excellent example of teamwork, in which some of the fundamentall principles of dialogism, e.g., sharing one's views in a dialogic atmosphere and showing respect for one another's sometimes diverging views, were well tested.

• •

We are most grateful for having the chance to add this publication to the present series of **the Media Education Publications of the Media Education Centre** of the Department of Teacher Education. We hope that our study will contribute to the development of media education and foreign language education.

Our special thanks to Mr **Kari Perenius** for giving a helping hand by adding the finalising touches to this publication.

Helsinki, March 15, 1998

MEDIA EDUCATION CENTRE

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[http://www.helsinki.fi/~tella/178mediaedu.html]

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His main areas of research focus on analysing the concept of telelogically-defined media education, modern information and communication technologies (MICT), telematics and open and distance learning (ODL), CALL (computer-assisted language learning), CELL (computer-enhanced language learning) and foreign language learning methodology. Professor Tella is also responsible for initial (pre-service) and in-service teacher education courses at the Department.

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Her main areas of interest focus on foreign language education, foreign language textbook production and evaluation, dialogic communication, and media education.

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Developing Dialogic Communication Culture in Media Education: Integrating Dialogism and Technology

Seppo Tella &
Marja Mononen-Aaltonen

> *"The context for human development is always a culture, never an isolated technology."*

The purpose of this study is to describe and analyse the emerging importance of dialogue, dialogism and dialogic communication culture in media education, with a special view to foreign language education and to cross-cultural communication. The concept of dialogue is discussed in relation to human-to-human communication (HHC) and to computer-mediated human communication (CMHC).

Another important aim is to analyse the role of technology, especially modern information and communication technologies (MICT), as an enhancing component in dialogic communication. This analysis is made through creating a multidimensional hierarchy of direct and mediated communication, to be applied to MICT. Tools and media are regarded as cultural artifacts, which are seen as a concept that integrates dialogism and technology.

Keywords: Dialogic communication; culture; cross-cultural communication; learning; media education; modern information and communication technologies (MICT); an information and communication society; pedagogy.

Abstrakti

Tutkimuksen tarkoituksena on kuvata ja analysoida dialogin, dialogismin ja dialogisen viestintäkulttuurin kasvavaa merkitystä mediakasvatuksessa, erityiskohteena vieraiden kielten didaktiikka ja kulttuurienvälinen viestintä. Dialogin käsitettä tarkastellaan suhteessa ihmistenväliseen viestintään ja tietokonevälitteiseen ihmistenväliseen viestintään.

Toinen keskeinen tavoite on analysoida tekniikan, erityisesti modernin tieto- ja viestintätekniikan roolia dialogisen viestinnän keskeisesti kasvavana komponenttina. Tämä analyysi tehdään kehittämällä moniulotteinen suoran ja välitetyn viestinnän hierarkia, jota sovelletaan moderniin tieto- ja viestintätekniikkaan. Välineitä ja viestimiä tarkastellaan kulttuurisina artifakteina, jotka nähdään käsitteenä, joka integroi dialogismia ja tekniikkaa.

Avainsanat: Dialoginen viestintä, kulttuuri, kulttuurienvälinen viestintä, oppiminen, mediakasvatus, moderni tieto- ja viestintätekniikka, tieto- ja viestintäyhteiskunta, kasvatus.

1. CHANGE, DIALOGUE, CULTURE AND TECHNOLOGY

Pedagogical change has been accelerated during the past few years by several phenomena, some of which are related to new ideas of teaching and learning, others to didactically sound applications of the latest technology. One tendency has embraced the increasing role of communication between humans and between humans and machines (human–machine interface).

The increasing importance of *communication* has been acknowledged among the majority of teachers and teacher educators, leading to an enhanced position of conversation, discourse and dialogue. The concept of *dialogue* has been a fashionable word for several decades. It is used in all kinds of situations to refer to various kinds of phenomena. For instance, when talking about the role of dialogue and conversation, people may refer to, for example, scientific discourse, family life, psychological phenomena, theatre performances and information theory. When speaking of dialogue, foreign language teachers often think of micro-dialogues or those dialogues that most textbooks consist of, i.e., simplified, didactically tailored, often not quite what native speakers of the target language might use themselves. This kind of dialogue is not what we mean in this publication.

Our key concept is *dialogic communication,* or *dialogism,* in education. By integrating dialogue and communication into dialogic communication, we underline the importance of both elements of this concept. By dialogism, we mainly refer to a more scientific approach to dialogic communication (dialogics, dialogicity, etc. cf. Chapter 3.1). In this publication, we will also motivate why we believe dialogic communication is *le mot juste,* the proper term to be used. We will also analyse some key arguments as put forward, among others, by Vygotsky (1929; 1978; 1981; 1987), Bakhtin (1979; 1981; 1984; 1986), Bibler (1991), Kramsch (1993a; 1993b), Kitaigorodskaya (1988; 1990) and Isaacs (1996).

Culture, undoubtedly, is a multifaceted concept. Collins (1996, 235) cites British cultural critic Raymond Williams (1976) who made the very apposite remark that "'culture' is one of the two or three most complicated words in the English language". Mowlana (1997, 239) has defined the relations between culture, learning and education in a most elaborate way: "Education is the mainstay of culture, for how one learns is culturally determined, but flexibility and creativity are the keys to positive change and growth."

Globalisation and advances in technology and their applications in education have given birth to an unprecedented need to understand cross-cultural communication more profoundly than before. Cross-cultural communication[1] is closely related to issues of culture and multiculturalism. Foreign language educators have tried to respond to this new situation by giving up communicative competence as their primary goal and by replacing it with cross-cultural or intercultural communication proficiency. However, not even cross-cultural communication *per se* seems to appropriately cover the kind of proficiency that is needed in multilingual and multicultural encounters. We argue that one element that could help teachers and foreign language learners understand different cultures better is dialogue. In this publication, we will therefore focus on the concept of "dialogue" in particular, with a view to some cultural aspects embedded in it.

---

[1] The concept of "cross-cultural communication" will be used in this publication. However, there are other terms in current use as well. Mowlana (1997), for instance, distinguishes between "international communication" and "intercultural communication". International communication, in his opinion, includes intercultural communication and describes "a field of inquiry and research that consists of the transfer of values, attitudes, opinion, and information through individuals, groups, governments, and technologies, as well as the study of the structure of institutions responsible for promoting or inhibiting such messages among nations and cultures" (Mowlana 1997, 240).

By *technology* we mainly refer to one crucial component of telelogically defined media education (cf. Tella 1997c, 18; also Tella 1997b, 3; Tella 1997e), i.e., to modern information and communication technologies (MICT). Some of our observations will also hold true for open and distance learning (ODL). According to Gell & Cochrane (1996, 251), "the information and communication technologies revolution started in the factory and office, then entered the home in the form of integrated entertainment and information systems". From a Finnish point of view, it is arguable whether the home preceded the school or whether it was the other way round. Both homes and schools are now on their way to making an appropriate use of modern technologies, albeit in slightly different ways. In addition, to some people's way of thinking, work and play employ communication to its fullest, but school often does so only to some extent. Many researchers (e.g., Gell & Cochrane 1996) believe that present distinctions between work, education and play will dissolve. New terms like "edutainment" (from education + entertainment) and "infotainment" (from information + entertainment) are signs of this development. Penny (1995b, 1) draws the close parallelism between technology and culture by writing that "[i]t would be difficult to refute the suggestion that technological change has been *the* major force for cultural change for at least a century". Even if this argument is accepted, it does not necessarily mean that we should accept what Bauman (1995, 26) states, a little ironically, about "the infinite capacity of the 'technological fix'".

Mowlana (1997, 195) is of the opinion that in many ways communication now is development, and he continues: "The revolutions of post-industrial society are revolutions in information and communication processes and services affecting social, political and economic structures. Communication and development studies become fused in a common search not for the impact of one on the other—communication does not cause development—but the concomitant evolution of the two toward new social, political, and economic organizations." (Mowlana 1997, 195) As a matter of fact, Mowlana (1997) makes an important distinction between the *communications revolution* and the *communication* *revolution* (Figure 1). The communications revolution refers to the spread of technology, systems innovation and the speed and quantity of messages. In this revolution, political, economic and technological aspects are valued more than other aspects. On the other hand, the communication revolution seeks dignity through dialogue. It is deeply grounded in humane, ethical, anti-bloc, self-reliance theories of societal development. It refers to the quest for satisfactory human interaction and—more importantly in the light of this publication—to *the quest for dialogue*. (Mowlana 1997, 234, 242)

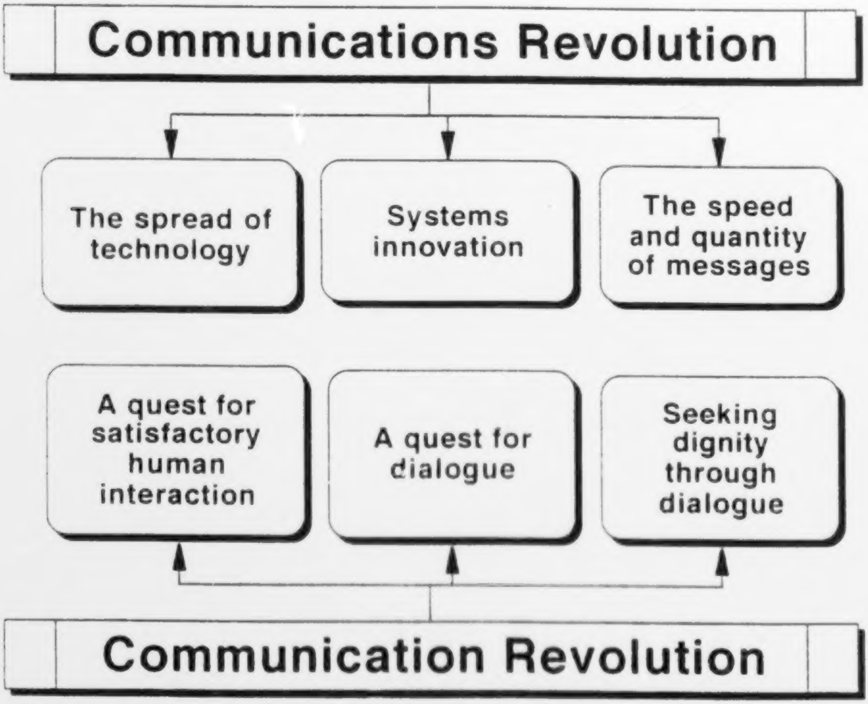
Communications Revolution
The spread of technology
Systems innovation
The speed and quantity of messages
A quest for satisfactory human interaction
A quest for dialogue
Seeking dignity through dialogue
Communication Revolution

Figure 1. The distinction between the communications revolution and the communication revolution (based on Mowlana 1997, 234).

International networks act as mediators in the emerging information society that uses them, they arise through individual people, as well as through institutions, to achieve certain ends; and therefore communication networks can be potential resources for power and its redistribution (Mowlana 1997, 200).

On the whole, modern information and communication technologies (MICT) have a two-fold impact on human communication: on the one hand they open up a new potential to increase mutual understanding worldwide, on the other hand, they provide teachers and students with new tools and techniques for human-to-human communication (HHC). Human-to-human communication is intrinsically culture-based and as such always conveys the possibility of misunderstandings and intra- and intercultural clashes, easily resulting in a new kind of cultural colonialism, not least in educational settings. Computer-mediated human communication (CMHC), on the other hand, is becoming more and more important, but it also needs deep understanding, as the basic question then is of a human–machine interface. A shorter form of CMHC is often used, i.e., CMC. The reason why we prefer CMHC to CMC is our emphasis on human communication, whether in real life or on-line electronically.

Our primary goals include the cultivation of the students' expertise when enhanced through a carefully reflective scaffolding of the teacher's own command of computer-mediated human communication.

In order to illustrate the main focus of this study and to put it in a wider perspective, we borrow the channels and types of international flow of information as developed by Mowlana (1997, 24; Figure 2).

Mowlana (1997, 24) emphasises the fact that technological orientation and human orientation should be thought of as being complementary, interrelated and adaptive. Our main focus is on Component 1 or on mail, telecommunications, networks and communication channels (the numbering of the components is ours, but the relational location of various components is faithful to Mowlana's sectorial illustration).

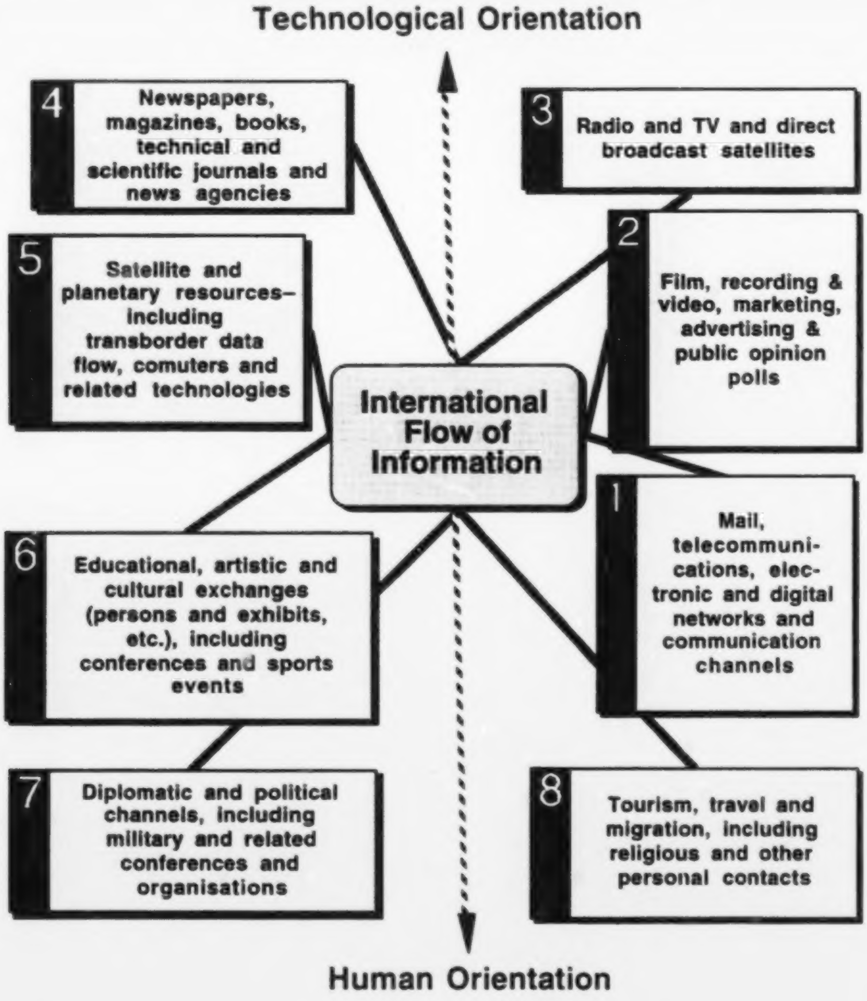
Technological Orientation
4 Newspapers, magazines, books, technical and scientific journals and news agencies
3 Radio and TV and direct broadcast satellites
5 Satellite and planetary resources–including transborder data flow, comuters and related technologies
2 Film, recording & video, marketing, advertising & public opinion polls
International Flow of Information
1 Mail, telecommunications, electronic and digital networks and communication channels
6 Educational, artistic and cultural exchanges (persons and exhibits, etc.), including conferences and sports events
7 Diplomatic and political channels, including military and related conferences and organisations
8 Tourism, travel and migration, including religious and other personal contacts
Human Orientation

FIGURE 2. CHANNELS AND TYPES OF INTERNATIONAL FLOW OF INFORMATION (BASED ON MOWLANA 1997, 24).

Much of our interest also lies in Component 6, especially with a view to educational perspectives and cross-cultural aspects of cultural exchanges. We will touch on some aspects of Component 5, but will lay more emphasis on human-to-human communication, rather than underscoring data flow between computers, though it is a *sine qua non* when the Internet is being discussed. Component 4 (e.g.,

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newspapers, magazines and books) will be mentioned when we speak of various levels of addressivity (or reciprocity) on page 58. Mowlana's figure (1997, 24) does not mention school nor educational systems as sources of flow of information, though he speaks elsewhere of the educational system as one of the most powerful channels of communication (Mowlana 1997, 238). In light of this, it is only necessary to point out that all our thinking is mirrored towards the educational uses of our two main concepts, viz. dialogue and modern information and communication technologies.

• •

To sum up, in this publication we aim for an initial analysis of dialogic communication culture, on the one hand and modern information and communication technologies on the other, to see what type of empowering synergy can be found in the integration of the two. Our perspectives will relate to teacher education and media education, with a special view to foreign language education. Our primary target is to focus on the potential of dialogism and modern information and communication technologies for teaching and learning that would make our students "be at home in a knowledge-based society" (Bereiter et al. 1997, 329).

What, then, finally motivates the research approach we have adopted for this publication, i.e., the idea of promoting dialogic communication culture in media education, with a view to the integration of dialogism and technology? Perhaps the best motivation has been phrased by Mowlana (1997) when he argued that

> "what is needed now is a shift from a manipulative, technology-oriented communication to more interaction, human dialogue, and exchange of ideas" (Mowlana 1997, 243).

In order to enable this kind of shift, we need to understand, better than ever, some of the fundamental principles that might prevent us from achieving this goal. This is what we will attempt to clarify in this publication.

2. DIFFERENT COMMUNICATION CHANNELS

The media system and the educational system are two of the most powerful channels of communication (Mowlana 1997, 238). As our starting point, we will present a model of different communication channels. The classification (Figure 3, partly based on Ball-Rokeach & Reardon 1988) covers intrapersonal communication (inner or private speech), monologic communication (traditional mass media communication), interpersonal dialogic communication and telelogic or telematic communication.

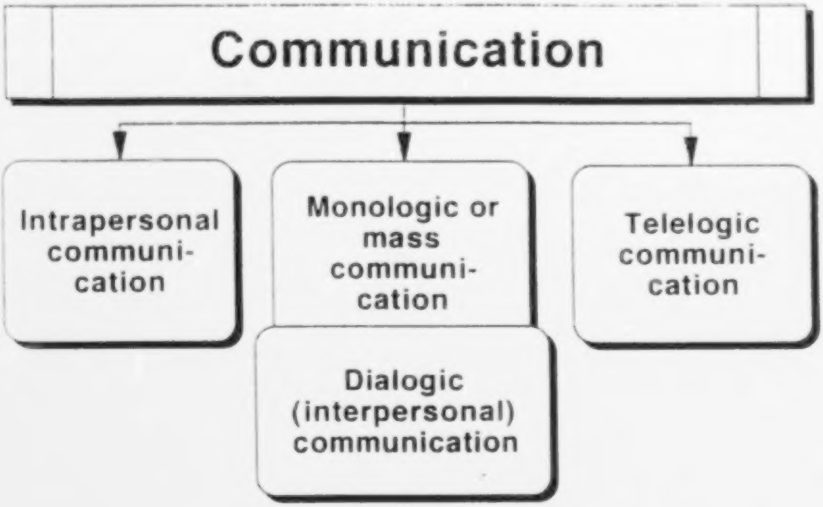
Communication
Intrapersonal communication
Monologic or mass communication
Telelogic communication
Dialogic (interpersonal) communication

FIGURE 3. A CLASSIFICATION OF DIFFERENT COMMUNICATION CHANNELS (TELLA 1994a, 72; PARTLY BASED ON BALL-ROKEACH & REARDON'S CLASSIFICATION 1988).

As the three concepts of monologic, dialogic and telelogic communication have been analysed elsewhere (cf. e.g., Tella 1994a, 45–47), only a few remarks will be made here from the point of view of this publication. These remarks, however, are crucial as we wish to distinguish between a term and a concept.

Intrapersonal communication can be seen to have connections to thinking and to man's logical linguistic processes. It could be called *inner speech,* whether vocalised or not. Some call it *private speech* (cf. e.g., Ashman & Conway 1997, 149). DeVito (1997) elaborates this concept by saying that

> "[i]n intrapersonal communication you talk with yourself. You talk with, learn about, and evaluate yourself; persuade yourself of this or that; reason about possible decisions to make; and rehearse the messages you intend to send to others." (DeVito 1997, 3)

We shall return to this later (page 69) when speaking of how language and thinking are interlinked.

Monologic communication, in Ball-Rokeach & Reardon's classification (1988), refers to the ways different mass media (press, TV, radio, etc.) used to communicate, i.e., in one-directional and from-one-to-many communication. Ball-Rokeach & Reardon argued, as early as 1988, that what they called telelogic communication would go on to gain ground at the expense of monologic communication. In 1998, there is no denying that their vision proved correct. Telelogic communication, in the forms of telematics and computer-mediated communication, has become everyday routine to many.

From the point of view of our argument, we simply make a note of dialogic communication or interpersonal communication in Ball-Rokeach & Reardon's classification (1988). They do not pay too much attention to this concept, as their primary target was to launch telelogic communication with an emphasis on small group and target group communication. The concept of *telelogic communication* is extremely central in this publication as well (cf. e.g., page 98), although we prefer the term "computer-mediated human communication" (CMHC).

In Ball-Rokeach & Reardon (1988), *dialogic communication* refers to human-to-human and especially to face-to-face communication, but it does not include the depth nor the seriousness of the construct we plan to promote in this publication. One could almost argue that the term used in this publication and by Ball-Rokeach & Reardon is the same, but the scope of the construct itself is palpably different. Mowlana (1997) gives a vivid historical analysis of how dialogic (or intrapersonal) communication was affected by the French Revolution, which, in the end, and against its initial ideals, helped to substitute nation-state communication for interpersonal communication. Mass media started to mediate government-citizen communication, while cultures moved inexorably from association (*Gemeinschaft*) into abstraction (*Gesellschaft*), leading to the growth of instrumental and functional communication at the expense of inter/intrapersonal communication. (Mowlana 1997, 235)

In the final analysis, however, the above-cited channels will not give us an adequate basis for classifying and analysing the most frequently used MICT (or media education) tools. So we realise that a multidimensional model will be needed. However, the new model will only be presented after we have first discussed the nature of dialogue and dialogism (Figure 11 on page 70). And, as Mowlana (1997) so sharply retorts,

> "we must [first] shift our attention and our emphasis from *communications* (as means) to *communication* (as sharing and trust)" (Mowlana 1997, 235).

3. DIALOGUE, DIALOGISM, CULTURE, LEARNING AND TECHNOLOGY

"It is difficult to believe that someone
can differ from us and be right."

In this chapter, some ideas regarding the intrinsic nature of dialogue and dialogism will be presented and commented upon. These ideas will be based on the writings of both Western and Russian theorists. Our aim is to illustrate certain aspects of dialogue and demonstrate how multifaceted this concept is. This chapter, however, begins with some reflections on the bewildering terms related to dialogue and dialogism.

3.1 Dialogism, Dialogics, Dialogicality

The term and concept to be used in this publication is *dialogism.* As, however, several other terms, especially *dialogics* and *dialogicity,* occur in the research literature, we begin by discussing some differences between these before restarting with the basic notion of dialogue, on which dialogism is construed.

In addition to dialogism, *dialogics* is a term used, among others, by Pearce (1994). She uses a variety of terms based on dialogic elements, e.g., *a dialogic principle, a dialogic theory, dialogics, dialogism, dialogicality* and *dialogic philosophy* (Pearce 1994, 1–2 *et passim*). The *dialogic philosophy* is used to refer to the Bakhtinian philosophy, which we will equally regard as our main source of reference (cf. Chapter 3.4.2). Our interpretation is that, in general, *dialogism* is a perspective, a point of view, a standpoint with reference to communication. In Pearce (1994), dialogism refers to several elements; it is described as an area of literary theory and textual practice, but also as a model of academic debate and even as a new epistemology (Pearce 1994, 6). One use of this term in Pearce

(1994, 2) implies an instrument of communication that can only function through the interaction of two people. Pearce (1994, 2) illustrates her point of view with an example of a person calling somebody else on the telephone; the caller can only speak when the person being dialled picks up the receiver (cf. also our telephone metaphor on page 59). This active communication of two participants (the speaker and his or her reciprocating addressee) is also referred to as *dialogicality* by Pearce (1994, 2). Another interesting connotation of dialogism is suggested by Pearce (1994, 111), viz.

> "[D]ialogism may possible be regarded as the theoretical balm we need to heal a world split open by the contemporary obsession with 'difference'" (Pearce 1994, 111).

In Pearce (1994, 2, 6), *dialogics* mostly refers to topics but, in the final "most grandiose" analysis, she "upgrades" dialogics to the status of an epistemology (a "theory of the grounds of knowledge": how we "make meaning"). Gardiner (1992) also speaks of dialogics, even if it is not indicated in the index of his book. By dialogics Gardiner (1992, 39), in our understanding, refers to the dialogic interaction between self and other and the incorporation of the latter's conceptual horizon to one's own perspective.

The notion of *dialogicality*, on the other hand, is used by Pearce (1994, 107) to posit a model of female writing in its specificity and in terms of the positioning of its addressee. In the foreword to Wertsch (1985a, ix), the notion of dialogicality is also mentioned, but without any definition (nor being included in the index of the book). In this publication, we will not use these terms nor will we elaborate on them or analyse their intrinsic nature.

Here, we mostly use the notions of dialogue, dialogism and dialogic communication culture and put aside the subtle differences between dialogics and dialogicality. This is due to the fact that despite our deliberate effort of deconstructing the representations of these two notions, we still believe the core of their implicit and explicit significant meaning is fully embedded in the construct of dialogism; and the use of all three in the same publication would not add to the point we would like to put forward.

3.2 Western Interpretations of Dialogue

As mentioned before, in everyday life, dialogue is often used to refer to face-to-face discussions usually with someone we know. Dictionary definitions[2] widen this somewhat, and especially in the literary direction.

Etymologically, dialogue goes back to the Greek *dialogos* (διαλογος), conversation, from *dialegesthai* (διαλεγεσθαι), to discuss. The word is also analysed (e.g., Jenlink & Carr 1996, 33) as *logos* referring to the "meaning of the word" and *dia* meaning "through".

However, in the research literature and for scientific purposes, dialogue must be defined in a more exact manner. In the following, we present a few definitions to shed more light on the versatile character of dialogue. Isaacs' definition is as follows:

> "Dialogue is a unique form of conversation with potential to improve collective inquiry processes, to produce co-ordinated action among collectives, and to bring about genuine social change. Dialogue creates a special environment in which the tacit, fragmented forces that guide how people think and act can begin to be perceived and inquired into, and

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[2] Some examples: Oxford Advanced Dictionary of Current English: 1) (writing in the form of a) conversation or talk, 2) exchange of views (between leaders, etc.), 3) talk. The American Heritage Dictionary of the English Language: 1) a conversation between two or more people, 2a) a conversation between characters in a drama or narrative, 2b) the lines or passages in a script that are intended to be spoken, 3) a literary work written in the form of a conversation, 4) a composition or passage for two or more parts, suggestive of conversational interplay, 5) an exchange of ideas or opinions. In Finnish, *dialogi = vuoropuhelu, kaksinpuhelu, keskustelu* (Nykysuomen sivistyssanakirja).

> the underlying patterns of influence can be shifted." (Isaacs 1996, 20)

Isaacs (1996), to whose research we will refer later in another context, has gathered together many different definitions for research purposes. One of his arguments is that dialogue is not mere talk and it should be distinguished from ordinary forms of conversation, because in the deepest sense dialogue stands for the free flow of meaning (Isaacs 1996, 20). Isaacs also advocates in the spirit of Buber (1965) a definition of dialogue that consists of a genuine meeting between people "who express themselves without reserve, and are free of the desire for semblance" (Buber 1965; cited in Isaacs 1996, 20).

Based on his research findings, Isaacs (1996, 21) contends that dialogue might provide "a potentially critical foundational process for creating new 'infrastructures for learning' within modern organizations". Isaacs has established four central themes based on his research, viz.

> 1) Dialogue seems to be emerging as a cornerstone for "organisational learning".
>
> 2) Dialogue appears to be a powerful way of harnessing the inherent self-organising collective intelligence of groups of people.
>
> 3) Dialogue shows possibilities for being an important breakthrough in the way human beings might govern themselves.
>
> 4) Dialogue shows promise as an innovative alternative approach to producing co-ordinated action among collectives. (Isaacs 1996, 21)

In this sense, dialogue does not mean a debate, in order to beat down one's opponent. It does not become dialectic, either, because then the free spontaneous exchange of ideas will be lost. Isaacs (1996, 26) argues in his evolutionary model of dialogue that the flow of meaning in dialogue will at its best lead to metalogue, which implies that the meaning has moved along during the process of dialogue, resulting in creativity in ideas, for instance.

Conversation is one of the concepts that are often though of when speaking of dialogue. Jenlink & Carr (1996) speak of four types of conversations common in educational settings, viz. dialectic, discussion, dialogue and design (cf. Figure 4.)

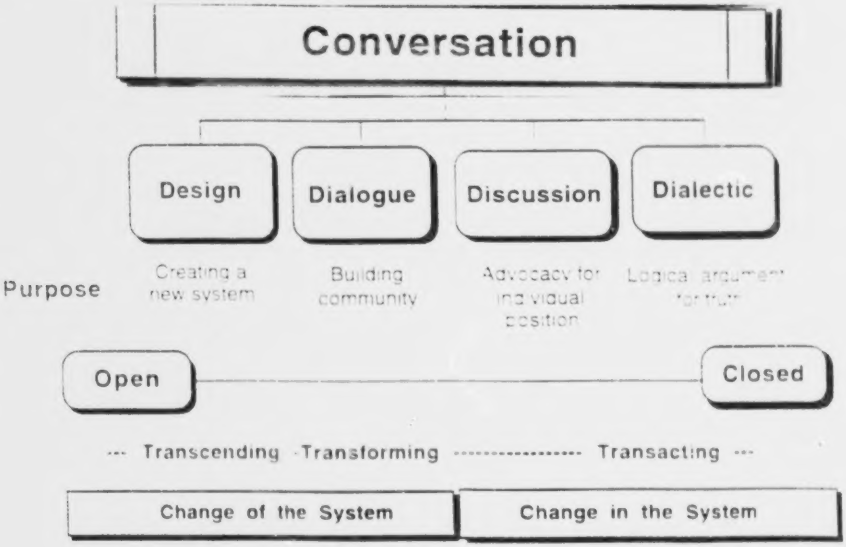
Conversation
Design
Dialogue
Discussion
Dialectic
Purpose
Creating a new system
Building community
Advocacy for individual position
Logical argument for truth
Open
Closed
--- Transcending ·Transforming ----------------- Transacting ---
Change of the System
Change in the System

FIGURE 4. TYPOLOGY OF CONVERSATION (JENLINK & CARR 1996, 33).

In Jenlink & Carr's typology (1996, 33), discussion is expected to be the most familiar and pragmatic of these four types. Dialectic and Design conversations both exemplify more disciplined orientations to conversation and are, perhaps, less obvious in school contexts. Dialectic conversation is a scientific approach in Jenlink & Carr's opinion.

The fourth type, dialogue, is also regarded as a pragmatic form of conversation, though less often experienced in school change efforts according to Jenlink & Carr (1996). From the perspective of our research, however, the purpose of dialogue, i.e., building a community (or a collective), is important. In this sense this interpretation approaches

Bohm's (1990; cited in Jenlink & Carr 1996, 37) classical analysis of dialogue as "a conversation where meaning is constructed through sharing".

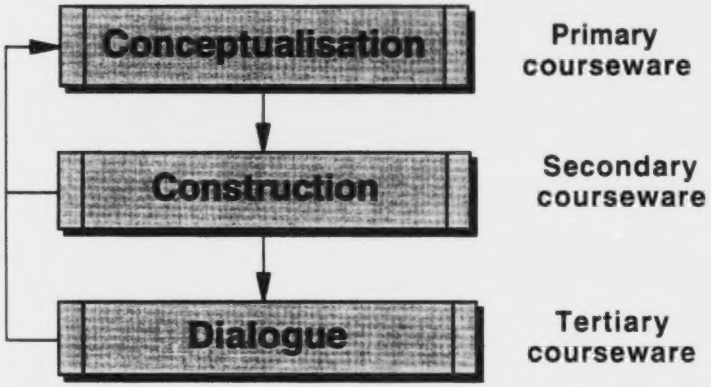

FIGURE 5. A DESCRIPTION OF LEARNING AS A CYCLE OF STAGES AND THE COURSEWARE RELATED TO EACH OF THE STAGES (MAYES & COVENTRY 1994; CITED IN HIETALA & NIEMIREPO 1995, 23).

Another way of looking at dialogue is to see it as one stage of learning as a cycle (Mayes & Coventry 1994; cited in Hietala & Niemirepo 1995). The cycle (Figure 5) is originally intended to be used for assessing different educational software (courseware), but can also be regarded as an attempt to combine a model of learning through technology. Educational software is then interpreted to be tools of learning and including some contents to be learned at the same time (e.g., a teaching "package" of a certain content area).

In light of this, we might simply state a short definition of learning and problem-solving as they are closely associated to this issue. We refer to the brief and apt definitions of Ashman & Conway (1997):

> "Learning refers to the acquisition of knowledge through interactions with, and observations of, the physical world and the creatures that inhabit it. ... Problem-solving refers to the application of knowledge to achieve a desired outcome. ... So, in general terms, learning refers to obtaining knowl-

> edge, and problem-solving refers to using it." (Ashman & Conway 1997, 1)

In this cycle, the first stage is conceptualisation, in which the various and pedagogically relevant ways of presenting content to be learned (with the aid of multimedia courseware, simulations, etc.) are essential. Secondary level courseware is based on constructivist ideas, enabling the learner to work with less structured material, orchestrating and producing his or her own presentations. (Hietala & Niemirepo 1995, 22)

The third stage of learning is called dialogue. It "shapes and reorganises the material learned through discussion, mutual questioning and reflection in a social environment (the learner together with peers and teacher)" (Hietala & Niemirepo 1995, 22). For the time being, appropriate courseware for this stage has been rare, but network-based learning (NBL; cf. Tella 1997a, 13) has brought with it some more general tools and software, especially multimedia conferencing[3] tools, groupware and reflection tools. We will analyse these tools later in this report, when combining the analysis of dialogue with MICT.

3.3 Dialogism as a Pragmatically Oriented Theory of Knowledge

Dialogic communication and dialogism, as based on the ideas of Bakhtin (1979; 1984), Vygotsky (1978; 1987) and Buber (1965), are much broader concepts than dialogic communication as defined by Ball-Rokeach & Reardon (1988). We believe that dialogue, dialogism and dialogic communication culture should seriously be taken into account when analysing new technology-rich learning environments.

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[3] By "multimedia conferencing" we refer to Trentin & Benigno's (1997, 32) definition which reads as follows: "The term multimedia conferencing signifies the possibility of interacting at a distance through a variety of communication channels: audio, video, and remote sharing by two or more users of computer screens or software applications."

Bakhtin's dialogism is best understood as a pragmatically oriented theory of knowledge that aims to grasp human behaviour through the use humans make of language (Holquist 1990, 14–15). Thus, dialogism is a philosophical school which deals with research on dialogue and the notion of multivocality or polyphony.

Bibler, the head of the group of Russian scholars called "Dialogue of Cultures", cautions against everyday uses of dialogue. He expresses his worry about the superficial and thoughtless use of dialogue this way: "Hey, look—this is dialogue, and that is dialogue, and that over there is dialogue, too" (Bibler 1991, 229).

In the following, we intend to look into some of the ideas expressed by these theorists and philosophers. At times, we refer directly to the Russian-language original, but we also consult translations into English and comment on the differences between our interpretations and those of the translators. It is also necessary to point out that this publication is not concerned with *all* the ideas and *all* the philosophies of these afore-mentioned writers (Vygotsky; Bakhtin; Bibler; Buber); the main idea is to shed more light on some concepts and their foundations with regard to dialogue, culture and learning.

3.4 Vygotsky, Bakhtin and Bibler on Dialogue and Culture

Lev Semenovich Vygotsky, a Russian psychologist and philosopher (1896–1934), and Mikhail M. Bakhtin (1895–1975), a Russian theorist, literary critic and philosopher, "an enigmatic, even mysterious figure" (Gardiner 1992, 1), are very close to each other as thinkers; and Bakhtin's influence on Vygotsky's thinking is obvious. Although both focus on the dialogic character of speech and its role in the social constitution and genesis of mind, their understandings of dialogue are different in important aspects (e.g., Cheyne & Tarulli s.a.).

Vladimir Bibler is also Bakhtin's disciple in many ways, though he has a larger conception of dialogue than Bakhtin. We will introduce some of Vygotsky's ideas first, followed by some afterthoughts of his zone of proximal development, with a view to MICT and telecommunications. Then we will discuss some aspects of Bakhtin's dialogue and dialogism, seen very much through the eyes of Bibler, his spiritual disciple. All three discuss dialogue, dialogism and culture in many ways. Vygotsky, on the other hand, also deals with development, learning and the role of dialogue.

3.4.1 Vygotsky and the Zone of Proximal Development (ZPD)

3.4.1.1 Origin and Different Interpretations of the ZPD

The notion of the zone of proximal development (ZPD) has attracted Western psychologists since the publication of *Mind in Society* in 1978. The often cited definition of the notion originates from this collection of Vygotsky's writings (Chapter 6, Interaction between Learning and Development). The editors of the collection (Michael Cole, Vera John-Steiner, Sylvia Scribner and Ellen Souberman) "have taken significant liberties" (as they say themselves) in putting separate essays together. They remind the reader in the preface that the collection is "not a literal translation of Vygotsky, but rather our edited translation of Vygotsky, from which we have omitted material that seemed redundant and to which we have added material that seemed to make his points clearer" (Vygotsky 1978, x). Chapters 6 and 8 of that book "are from a posthumously published collection of essays entitled *Mental Development of Children and the Process of Learning* (1935)" (Vygotsky 1978, ix). The original title of this collection is Умственное развитие детей в процессе обучения. Статьи (*Umstvennoe razvitie detei v protsesse obucheniya. Stat'i)*, the literal translation being either *Children's mental development in the process of education* or *Children's mental development in the process of teaching*. Education or teaching has become learning. The English equivalent for the term *obuchenie* is *learning* in certain contexts, but not in this one. Wertsch (1985a; cf. also Wertsch 1985b) translates the term as *instruction* and points out the cases when "Vygotsky's use of the term seems to focus primarily on the learning aspect" (Wertsch 1985a, 235), which is very rare indeed. Vygotsky's concern in this essay is the relation between the child's potential development and education. But the unifying thread of the original collection is obscured in the translation by Cole et al. (Vygotsky 1978) due to large omissions of the original text.

The editors claim that Vygotsky's style is "extremely difficult". In the same way, Wertsch, Del Río & Alvarez (1995, 12) note that Vygotsky's last volume, *Thinking and Speech* (*Myshlenie i Rech'*) has sometimes been mistranslated into English as "thought" and "language", which has served to obscure the action orientation in Vygotsky's writings. Frawlay (1997, 27) speaks of "the seminal but cryptic Vygotskyan text". A vivid discussion of problems connected to the works of Vygotsky and his contemporaries is also presented by Cole (1995, 188). — Our conception of Vygotsky's style, however, is completely opposite to that of Cole, John-Steiner, Scribner & Souberman (Vygotsky 1978), as well as to the conception of Wertsch, Del Río & Alvarez (1995); we find the original Russian text well formulated, and it is easy to follow Vygotsky's thinking.

As to Vygotsky's original writings, four essays of the original seven in Умственное развитие детей в процессе обучения have been included in the 2nd edition of *Pedagogicheskaya psikhologiya* (1996) as a separate section, covering pages 321–391. In the English version by Cole, John-Steiner, Scribner & Souberman (Vygotsky 1978), Chapter 6 covers pages 79–91, Chapter 8 pages 105–119. The editors have omitted 34 pages from the original essay, which, in our interpretation, contain some of the most interesting and central ideas in Vygotsky's whole thinking. Briefly, what has been omitted is the context of Vygotsky's thinking: first, his argumentation against Piaget's view that the child's development is pre-coded and "genetic" and cannot be intentionally accelerated (Piaget's conception seen through Holquist 1990, 79). And second, Vygotsky's discussion of the development of everyday and scientific concepts at school age.

Omitting this relevant context coupled with obvious mistakes in translation are bound to have led to interpretations that are foreign to Vygotsky's original thinking. The notion of the zone of proximal development has further been obscured by the fact that the non-Russian scholars, who rely on the translated versions of Vygotsky's work, have "not only assimilated Vygotsky's ideas into their own studies but also broadened and enriched the notion of the zone of proximal development" (Kozulin 1990, 170). In our understanding, Kozulin (1990) discusses the ZPD in its original context and gives the readers a most faithful interpretation of the original text and of Vygotsky (1978) and his thinking. Kozulin's book (1990) can be considered the first comprehensive account of Vygotsky's theories and thinking.

The notion of the zone of proximal development (ZPD) has been translated in different ways into English. Minick 1987 (cited in Ashman & Conway 1997, 97), for instance, claims that in its original Russian (*zona blizhaishego razvitiya*), the term is more accurately translated as 'zones of nearest development'. We simply note that the closest literal translation would be 'the zone [not zones] of the nearest development'.

3.4.1.2 The ZPD Revisited

Vygotsky's three principal arguments included

> (1) making meaning, in which the community has an important role and the people who surround a leader have an influ-

> ence on his or her way of seeing the world, i.e., meaning is socially constructed;
>
> (2) tools for cognitive development. These tools include, among other things, culture, language, but also adults that can help learners in their learning process. The quality of these tools directly affect the rate of development. "Mediation refers to the need for someone other than the learner to translate knowledge about the society and culture so that it can be internalised by the learner" (Ashman & Conway 1997, 96); and
>
> (3) the zone of proximal development.

Vygotsky's cultural-historical theory provides a basis for understanding the role of dialogue in the pedagogic process. For Vygotsky, learning is a social process: It is the dialogue with other human beings that develops one's conceptions of the world. Learning is both reproductive and productive: one can remember and repeat, but he is also able to shape and reshape his own conceptions (Lindqvist 1995, 40-41). People are basically creative, as they create their own conceptions of the world, and make their own interpretations. All this is in agreement with the constructivist view of learning: people construct their knowledge based on their prior knowledge and experience. But as the constructivist view is mainly concerned with knowledge, we adopt the cultural-historical theory which, according to Lindqvist (1995, 40), displays an all-embracing cultural approach, uniting art, social processes and culture. Smagorinsky (1995) has summarised some of the central features in Vygotsky's thinking in the following sentence: "Vygotsky saw development as social in origin and reliant on tools and signs for the mediation of mental processes" (Smagorinsky 1995, 192).

According to Radzikhovskii 1991, for Vygotsky, dialogue was the concrete, psychological equivalent of the social nature of the mind, i.e., the totality of all social relations constituting the human essence. Thus, dialogue characterises the human mind and consciousness. (Radzikhovskii 1991, 12; cited in Cheyne & Tarulli s.a.)

Wertsch (1980) suggests that Vygotsky's writings concerning egocentric and inner speech reveal that "more appropriate terms for what he was studying would be 'egocentric dialogue' and 'inner dialogue'". Although "Vygotsky never made claims that were as specific about the dialogic nature of inner speech as [Bakhtinian claims] ... a detailed examination of some of his writings reveals that he was thinking along very similar lines" (Wertsch 1980, 151–152; cited in Cheyne & Tarulli s.a.).

Cheyne & Tarulli (s.a.) have noticed that when the notion of dialogue is invoked by Vygotsky, it is most often to describe face-to-face oral–aural speech and only rarely and ambiguously with reference to inner speech, writing and thinking. They also argue that, significantly, many of Vygotsky's limited references to dialogue appear in his discussion of the syntactic characteristics, predication in particular, that define inner speech and that differentiate it from other speech forms. On these differences Vygotsky was quite clear: "Written speech and inner speech are monologic speech forms. Oral speech is generally dialogic" (Vygotsky 1987, 271). "Inner speech," Vygotsky (1987, 257) explains, "is speech for oneself. External speech is speech for others." (Cheyne & Tarulli s.a.) For Vygotsky, speech is a process, if not a form of action, that uses language as a means (Wertsch, Del Río & Alvarez 1995, 12).

The notion of dialogue figures most clearly in Vygotsky's social–interactional thinking. His concept of the *zone of proximal development* (ZPD) is the basis for analysing education as communication. It is also one of the best-known, and as explained above, slightly misunderstood and even more falsely interpreted concepts of learning that has influenced thinking in the East as well as in the West. Ashman & Conway (1997, 97), for instance, state that "the concept [of the ZPD] was not well developed by Vygotsky prior to his death and it has been suggested that his ideas have not been translated accurately into North American literature and research". Vygotsky wrote in the early 1930s, we refer partly to the English language translation of Vygotsky

(1962) but mostly to the English language translation of 1978[4]. Vygotsky (1978) defines the ZPD as

> "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky 1978, 86).

Vygotsky himself elaborates his idea in the following way:

> "The zone of proximal development defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state. These functions could be termed the 'buds' or 'flowers' of development rather than the 'fruits' of development. The actual developmental level characterizes mental development retrospectively, while the zone of proximal development characterizes mental development prospectively." (Vygotsky 1978, 86-87)[5]

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[4] The Finnish translation appeared in 1982 (Vygotsky, L. S. 1982. Ajattelu ja kieli. Espoo: Weilin+Göös).

[5] The quote comes from Vygotsky's speech that was edited from shorthand notes by his students (Zankov, Shif & Elkonin) for a collection of his articles published in 1935, i.e., after his death (Davydov, Yelizarova & Tsukerman 1996, 519). The speech is entitled Динамика умственного развития школьника в связи с обучением (*The dynamics of the pupil's mental development in the process of teaching*) (Vygotsky 1996, 336–354), and it gives us the context in which Vygotsky introduced the notion of the ZPD. It should also be noted that in the last sentence of the quote the translator changes Vygotsky's style, cf. the Russian origin: Уровень актуального развития характеризует успехи развития, итоги развития на вчерашний день, а зона ближайшего развития характеризует умственное развинтие на завтрашний день. ("The actual developmental level characterises the achievements of the development, the total amount of yesterday's development, while the zone of proximal (nearest) development characterises the mental development of tomorrow") (Vygotsky 1996, 345). Thus, Vygotsky's "yesterday" has been changed to "retrospectively", and "tomorrow" to "prospectively", which, of course, stylistically means to move from a very concrete example to something more abstract. We wonder

And he still adds one important element, i.e., the idea of "good learning":

> "Thus, the notion of a zone of proximal development enables us to propound a new formula, namely that the only 'good learning' is that which is in advance of development." (Vygotsky 1978, 89)[6]

The ZPD implies that the learner has a freedom of choice, but he must be challenged and this is where the teacher as an adult steps in (Lindqvist 1995, 42). Implied is the idea that what the learner can do with the adult today, he or she will be able to do on his own tomorrow. It also implies, as Smagorinsky (1995, 196) underlined, that "the mind is not fixed in its capacity but rather provides a range of potential" and is therefore both elastic and unbounded. Smagorinsky (1995) further argues that "the zone is a range of ability and its upper reaches are continually in a state of evolution. Development consists of using socially mediated assistance to move towards the higher levels of the range, which is itself always developing into a new and more complex state" (Smagorinsky 1995, 196).

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whether these kinds of changes have led many Western researchers to think of Vygotsky as a cryptic writer.

[6] This quote orinates from Проблема обучения и умственного развития в школьном возрасте (*The problem of education/teaching and the mental development in school age/during school years*) (Vygotsky 1996, 321–336), an article which was written by Vygotsky during the academic year 1933/34 (Davydov, Yelizarova & Tsukerman 1996, 519). It is in this article where Vygotsky extensively discusses the notion of the ZDP. Here again, it is not "good learning" (as in the translation into English), but "good teaching" Vygotsky is talking about, cf. the Russian origin: В отличие от старой точки зрения учение о зоне ближайшего развития позволяет выдвинуть противоположную формулу, гласящую, что только то обучение является хорошим, которое забегает вперёд развития (Vygotsky 1996, 332). And Vygotsky concludes that "[с]ущественным признаком обучения является то, что оно создаёт зону ближайшего развития … [the essential feature of teaching/education is that it creates the zone of proximal development]" (Vygotsky 1996, 334).

Cole & Wertsch (s.a.) link the above ideas to artifacts (e.g., Chapter 7) and cultural mediation (e.g., Chapter 7.2), two concepts we will discuss in detail later:

> "An essential aspect of this process is that they must be able to use words and other artifacts in ways that extend beyond their current understanding of them, thereby co-ordinating with possible future forms of action. If we ask what makes such intermental [between two or more people; our comment] functioning possible, we must certainly speak about issues such as context, the existing level of intramental functioning, and so forth. However, there is an essential sense in which intermental functioning and the benefits it offers a tutee in the zone of proximal development would not be available if one could not perform, or at least participate in performances, that go beyond one's current level of competence. In this sense, social interaction is not a direct, transparent, or unmediated process. Instead, it takes place in an artifact-saturated medium, including language, and this is a point that Vygotsky took into account in a thoroughgoing manner." (Cole & Wertsch s.a.)

Vygotsky's ZPD and the metaphors of *scaffolding* are in line with each other. Some of the first users of this term, now very frequent in cognitive science, cognitive psychology and in cognitive education, seem to have been Wood, Bruner & Ross, who in 1976 defined scaffolding as a "process that enables a child or novice to solve a problem, carry out a task, or achieve a goal that would be beyond his unassisted efforts" (cited in Cheyne & Tarulli s.a.). Ashman & Conway (1997, 98) note that there are two notions inherent in scaffolding: first, there is a reciprocal relationship between the teacher and the learner, and second, there is a progressive transfer of responsibility for initiating learning from the teacher to the learner. Cheyne & Tarulli (s.a.) say that the successful scaffolding of instruction requires that the teacher performs a number of functions, among which are the selection, organisation and presentation of a suitable task. It seems that

> "a major feature in ZPD is its dialogical structure in the Vygotskian sense: one in which tutor and learner are engaged in

> an exchange that aims at creating a consensus regarding, among other things, the goal-structure of the problem at hand and the actions most apposite to the problem's solution. Ideally, the teacher's utterances are aimed at ensuring the learner's maximal involvement in completing the task at hand, even in the absence of the latter's full understanding of the task situation..." (Cheyne & Tarulli s.a.)

One of Cheyne & Tarulli's (s.a.) finest insights is the observation that "one might even see the ZPD as Vygotsky's quite serious answer to Bakhtin's rhetorical question 'And what would I myself gain by the other's merging with me?' The gain for the child is enculturation." And that is not at all a poor *telos* (developmental endpoint or educational goal or "an optimal sense of development that implies the path psychological growth should take" [Smagorinsky 1995, 192])!

Bruner's (1985) interpretation of the ZPD is also worth knowing. He reports in a fascinating way how he became acquainted with Vygotskian thinking at a Psychology Congress in Montreal in 1954, and which revealed to him quite new horizons after Pavlov. Bruner pays a lot of attention to consciousness, probably to be called metacognition at present, in Vygotskian thinking. He cites Vygotsky's first translation into English:

> "Consciousness and control appear only at a late stage in the development of a function, after it has been used and practiced unconsciously and spontaneously. In order to subject a function to intellectual control, we must first possess it" (Vygotsky 1934, 90; cited in Bruner 1985, 24)

To Bruner's mind (1985, 24), the previous argument implies that prior to the development of self-directed, conscious control, action is governed by a more direct mode of responding to environmental events. We see in this argument a clear reference to the impact of learning environments on the child's (or the learner's) potential development (cf. our discussion in Chapter 6). Bruner (1985) also reflects upon an apparent contradiction in Vygotsky's (1978) idea of how consciousness and control are gained as follows:

> "If the child is enabled to advance by being under the tutelage of an adult or a more competent peer, then the tutor or the aiding peer serves the learner as a vicarious form of consciousness until such a time as the learner is able to master his own action through his own consciousness and control. When the child achieves that conscious control over a new function or conceptual system, it is then that he is able to use it as a tool. Up to that point, the tutor in effect performs the critical function of 'scaffolding' the learning task to make it possible for the child, in Vygotsky's word, to internalize external knowledge and convert it into a tool for conscious control." (Bruner 1985, 24–25)

The Vygotskian ZPD has inspired many researchers to further develop or otherwise interpret the original ZPD. Tiffin & Rajasingham (1995), for instance, first present the three factors in the educational process that Vygotsky presented, viz.

- someone in the role of learner;
- someone in the role of teacher; and
- something that constitutes a problem which the learner is trying to solve with the help of the teacher,

and then add a fourth which they believe is implicated in the three first—the knowledge needed to solve the problem. Tiffin & Rajasingham (1995) conclude:

> "We believe that *it is the interaction of these four factors—learners, teacher, knowledge and problem in a particular context—that constitute the fundamental communication process that is education* [emphasis added]. All these factors need to be present for education to take place, but the factors only exist in relation to one another and only for the period of time it takes a learner to master an ability to solve a class of problems. When a person 'knows' how to solve a 'problem', they do not need a 'teacher' and they are no longer a 'learner'. There is no ZPD. In this view of education, 'knowledge' only exists in relation to a class or domain of 'problems', and the role of teacher only exists in relation to someone who assumes the role of learner with regard to a class or domain of problems. The four factors can take many forms and can exist

> at different levels of complexity." (Tiffin & Rajasingham 1995, 24)

We do not share Tiffin & Rajasingham's (1995) definition of knowledge only existing in relation to a class or domain of "problems", as Vygotsky expressly underlines the fact that knowledge first comes from outside, but then becomes internalised by the learner, and he or she starts using it as his or her own. In this sense, we see that knowledge remains even after the teaching–learning interaction is over. Otherwise, the nature of knowledge would be extremely fleeting and no continuous process of knowledge-construction could be possible. But we do not deny the value of Tiffin & Rajasingham's idea of including the four components as such in the concept of education. Besides, it could be claimed that MICT is likely to help the learners' ZPDs to increase the depth and (sometimes perhaps) the speed of learning. This argument is based on the thought of technology holding a meaning to the learners, which usually implies that technical and technological tools must be used in an appropriate learning context. This is obviously the teacher's role to evaluate different learning situations in order to balance a proper use of technology at school.

Another four-stage interpretation—or enlargement—of Vygotsky's ZPD is presented by Tharp & Gallimore (1988, 35) (Figure 6).

Tharp & Gallimore's (1988) fourth stage is extremely interesting, especially from the point of view of development as it depicts quite well the process of non-linear progress in a learner. Learning is recursive in the sense that in order to achieve a higher stage, one sometimes must be able to give up already learnt skills or practices so as to learn a better or more effective way of doing the same thing. On the other hand, the effort of being able to de-automate something already acquired, also makes it possible to "de-fossilise" some routine-like patterns of behaviour. Naturally, in order to be able to do that, one must also be able to have reached a certain metacognitive level of awareness or knowledge of one's own skills and knowledge. If one is mature enough in a "meta-sense" to develop further, then the teacher–learner interaction is repeated again, but every time the recursive loop is repeated, the learner also gains more autonomy and becomes less dependent on the teacher, coach, expert or peer. We believe that Tharp & Gallimore's fourth stage is an excellent contribution to the ZPD interpretations.

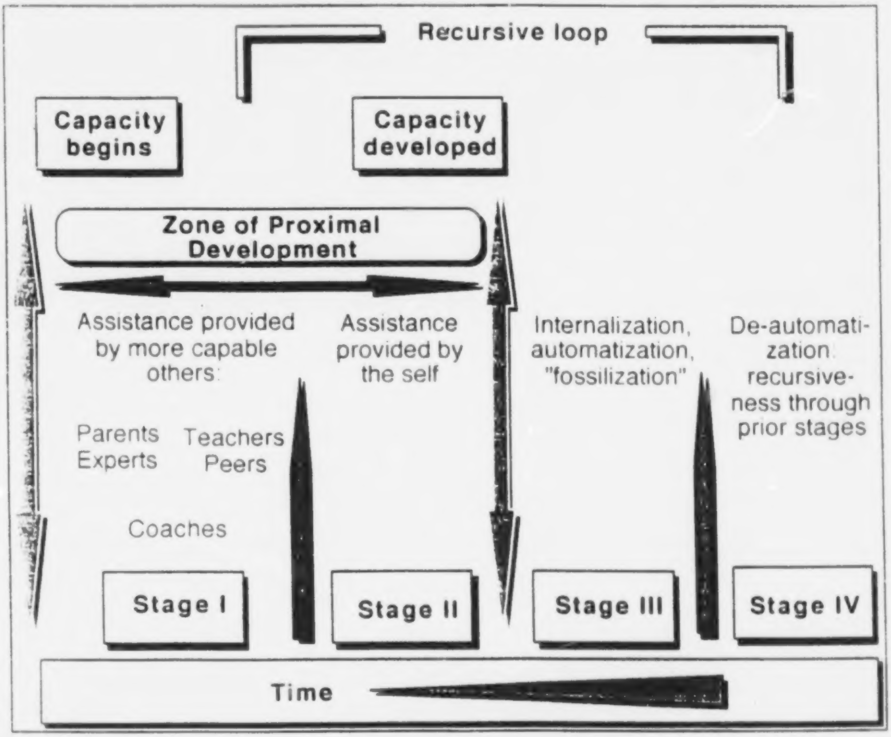
Recursive loop
Capacity begins
Capacity developed
Zone of Proximal Development
Assistance provided by more capable others:
Assistance provided by the self
Internalization, automatization, "fossilization"
De-automatization: recursiveness through prior stages
Parents
Experts
Teachers
Peers
Coaches
Stage I
Stage II
Stage III
Stage IV
Time

FIGURE 6. THE FOUR-STAGE MODEL OF THE ZONE OF PROXIMAL DEVELOPMENT (THARP & GALLIMORE 1988, 35).

Tiffin & Rajasingham (1995) have also analysed the ZPD from the point of view of a virtual class. In their view, the concept of the ZPD is the difference between what a person can do by themselves and what they could do with help from people more experienced than themselves (Tiffin & Rajasingham 1995, 22). They also argue that an educational system is there just to give the learner the help he or she needs according to the ZPD in order to make progress in the learning process. They go on to say that

> "[t]he ZPD makes it possible to think about education without having to do so in terms of schools and classrooms. It provides an answer to the question 'What is the purpose of education?' by saying that it is to provide assistance to the learner that enables them to achieve levels of development that they would not be able to achieve by themselves." (Tiffin & Rajasingham 1995, 22)

One of the misunderstandings in the Western world seems to be the way Vygotsky's ZPD is taken as a general learning theory that is valid everywhere and at any time. What Vygotsky (1978) himself seems to have thought of is the learning of concepts. A concept is born when different abstract qualities are re-synthesised in order to become the basic form of thinking. Vygotsky made the distinction between everyday concepts, which develop bottom up, and scientific concepts, which develop top-down. The learning processes of these two categories of concepts are different: everyday concepts are learnt through empirical generalisation; theoretical concepts ("intellectual tools") through theoretical generalisation. Both categories are important in a human being's development towards adulthood. But once the focus is on the theoretical concepts, then, in the final analysis, the question is of thinking and learning to think. And this perspective is crucial regarding education. In this sense Vygotsky's ideas constitute a philosophical and conceptual framework, which, naturally, is captivating enough to lend itself to different kinds of educational interpretations.

If seen in this perspective, the ZPD opens up wide horizons to foreign language education. First of all, it emphasises the importance of social interaction in language learning. Second, it sees social environment as an integral part of the process of cognitive change, because an individual, in order to get to an upper stage of performance, has to work with a person who has a superior ability structure. Third, the role of dialogue is important in the ZPD, as it plays a crucial role in learning. Besides, elaboration through discussion makes it possible to create situations that are likely to activate the learner's zone of proximal development.

The ZPD has often been interpreted (cf. e.g., DiPardo & Warshauer Freedman 1988, 144) to imply a co-operative environment in which power is productively shared, for instance a classroom that could be called a resource room, whose teacher would be a knowledgeable coach and its students one another's colleagues. We believe that it would be fair to say that the action model of an advanced student will get transferred and be used by his partner or his small group and thus ameliorate the group result. Alas, we do know that cognitive change (the learner realises the phenomenon to be learnt) does not necessarily lead to a direct change in behaviour so that the learner would use his or her knowledge to solve real problems.

The second main focus in this publication is on technology, especially on modern information and communication technologies, such as telematics and telecommunications tools. How do Vygotsky's ideas of the ZPD apply to technology? One could argue that the role of teacher and learner alike are bound to change in a technology-rich knowledge-intensive learning environment. We come back to learning environments later in this publication (page 99), but take up one point now concerning the teacher's role. Tiffin & Rajasingham (1995) suggest that

> "[w]hat Vygotsky did not have in mind in the pre-computer era he lived in is the possibility that the helping hand for the learner need not be human. Nor could he have realised that developments in telecommunications as well as computers would mean that the teacher, human or otherwise, could be anywhere and only present with the learner in a virtual sense." (Tiffin & Rajasingham 1995, 22)

Another post-Vygotskian development is the notion of teaching as a team activity and learning as a group activity (Tiffin & Rajasingham 1995, 23). None of these developments, however, decrease the important role of dialogue in Vygotsky's thinking. If education is communication, then learning is closely related to communication, and in this process dialogue is of uttermost importance. Whether communication is between humans or between humans and machines is also something that has changed since Vygotsky's days. This aspect will be taken up later when different kinds of communication will be compared.

The teacher–learner interaction is crucial in Vygotsky's thinking. Tiffin & Rajasingham (1995, 154) have launched an idea, perhaps *cum grano salis*, "with a grain of salt", of a "just-in-time teacher" for the learner to consult when needed:

> "One of the great strengths of the classroom system is that a learner has only to put their hand up to get a teacher's attention. … What is [now] needed is a network of teachers that makes it possible for learners to find the teachers they need when they need them. … There need be no restrictions on the distance to be travelled to meet a teacher. A learner can have a teacher in telepresence from anywhere in the world. Just as learners can be anywhere, so too can teleteachers. (Tiffin & Rajasingham 1995, 154)

Gell & Cochrane (1996) fancy the same kind of idea:

> "Lecturers in numerous colleges and universities need no longer deliver substantially the same material. Instead, students and staff can be *'teleported' through telecommunications networks* [emphasis added] to common work spaces where they can interact. This releases valuable time which educators can use for activities such as research, consultancy, and generating new knowledge, understanding, and revenues." (Gell & Cochrane 1996, 259)

These are interesting visions if seen in a Vygotskian perspective. But can the role of teacher in Vygotsky's thinking be replaced by a just-in-time teacher, or a team of teachers, accessible mainly on-line, teleported through networks?

3.4.2 Bakhtin's Concept of Dialogue

For Bakhtin, dialogue constitutes a key conceptual pivot in all his writings (Cheyne & Tarulli s.a.). Bakhtin (1984) himself writes about the dialogic nature of human life as follows:

> "The dialogic nature of consciousness, the dialogic nature of human life itself. The single adequate form for verbally expressing authentic human life is the open-ended dialogue. Life by its very nature is dialogic. To live means to participate in dialogue: to ask questions, to heed, to respond, to agree, and so forth. In this dialogue a person participates wholly and throughout his whole life: with his eyes, lips, hands, soul, spirit, with his whole body and deeds. He invests his entire self in discourse, and this discourse enters into the dialogic fabric of human life, into the world symposium." (Bakhtin, 1984, 293; cited in Cheyne & Tarulli s.a.)

According to Alexandrov & Struchkov's interview (1993, 342) with Vladimir Bibler, and as seen by Bibler himself, Bakhtin's works

> "constitute points of radical change in addressing the question, 'What is knowledge, what is the understanding of reality?' His intention may be outlined as follows: to grasp the problem of, say, the novelistic word as a key, not only to the idea of speech genres, but also to the idea of the intercourse between epochs in the 'great time' of culture, and even to the fundamental changes in the types of human comprehension of reality as a whole. And 'reality' here means not only those aspects thereof which are important for a literary critic (qua literary critic), but being itself—'being' in the broadest and the deepest, in the true philosophical, sense of the word." (Alexandrov & Struchkov's interview with Bibler 1993, 342)

According to Bibler, Bakhtin is different from many other thinkers, i.a., Martin Buber or other proponents of "dialogic philosophy", in that his meditations on the fundamental significance of dialogue, on its existential, ontological meaning, do not take the shape of general philosophising. Bakhtin altered not only the subject matter of philosophy, but the very mode of philosophising as well—the very understanding of what it means to reason. Bakhtin outlined the transition from cognising reason to dialogic reason, whose mode is mutual understanding. (Alexandrov & Struchkov 1993, 342, 356)

Bakhtin argues against the "disjointed [razomknutyi] text" by stating that a text's cultural significance is not assigned to it by the fact that it may be torn asunder, quoted, supplemented, covertly or overtly disputed, parodied, and so forth. If the text is to become culturally significant, attention must be focused on the whole—to comprehend the speech genre, the peculiarity of this literary creation as integral utterance. This implies that the model for analysis (and synthesis) of texts in all spheres of culture is what has long since become the principal topic of attention and understanding of literary critics: viz. the phenomenon of literary creation, with its main features of composition, *peripeteia,* inner completeness from the beginning to the end, i.e., whatever makes it a single indivisible whole. What Bakhtin's approach enables is the perception of the pattern of (artistic) creation even in the scientific text, its comprehension as an integral creation of theoretical thought. (Alexandrov & Struchkov 1993, 344–346)

> "The history of science turns out to be the keynote, defining component of the theoretical concept itself, revealing the latter's own inherent dialogism (logical, theoretical, constructive dialogism involved, e.g., in the virtual 'composition' of elementary particles...). Reality itself proves to be inherently dialogic." (Alexandrov & Struchkov 1993, 347)

As to the inner meanings of dialogue, Bibler interprets Bakhtin's main idea as follows: "Against this approach built upon the idea of 'precision' of knowledge, Bakhtin sets off *the idea of depth and mutual understanding* [emphasis added]. (He regards it as essential for humanitarian knowledge; from our point of view, it is essential for the contemporary mode of thinking as a whole.) When we come to the deepest points of comprehension, what is required of us is not so much the mathematically expressed exactness (this task is for machines) as the possibility of mutual understanding with another theoretical conception." (Alexandrov & Struchkov 1993, 348)

Bibler (cited in Alexandrov & Struchkov 1993) problematises Bakhtin's way of taking the novelistic word as the model of dialogue *vis-à-vis* more creative dialogue ...

> "For Bakhtin, the phenomenon of speech genre is of course essential as the point of emergence of the new type of thinking. At the same time, however, he has chosen the novelistic word as the sole culturally significant speech genre. It is into the novelistic type of dialogue that he draws all other forms of dialogue, all other forms of communication. But where, then, is the creating dialogue [tvoriashchii dialog], the newly emerging type of utterance?" (Alexandrov & Struchkov 1993, 351)

... and criticises him of keeping dialogue within the spectrum of consciousness, but not arriving at the idea of thinking. Bibler argues that there are two limits to Bakhtin's understanding of dialogue. First, dialogue is eliminated from lyric poetry as entirely realising the sole voice of one particular author. Second, in Bakhtin, dialogue is eliminated from philosophical discourse, which he calls monologic. However dialectical it may be, philosophy always strives for systematic, logical monism. Consequently, dialogue in Bakhtin's approach is eliminated from those very points where it emerges. (Alexandrov & Struchkov 1993, 352–353)

Bibler's argument is strongly opposite to Bakhtin's, it seems, if we base our view on the following statement by Bibler:

> "It is true that in poetry—and, most obviously, in lyric poetry—one exists in one's solitary being. The voice of verse is my voice *par excellence*. But it is precisely here that dialogue, however paradoxical it may seem, is most intense. It is of course easy to say: 'Dialogue is where two persons are present. But what if there is only one person, quite private? Why dialogize then, and with whom? In this case, there is no need for dialogue. The poet is absolutely monological, so it seems.' Actually, however, the matter is quite the reverse! It is precisely where and when one is alone, in one's inner speech,

> that one is genuinely dialogic—and no escape is possible from this kind of dialogue. It is here that one does not coincide with oneself, is not 'self-same' but 'exterior' [vnenakhodim] to oneself. Dialogue in this case cannot be dispensed with. I have walked away and have taken my dialogism with me. To put it another way: nowise can I escape from the 'dialogic inhesion' of my consciousness, thinking, comprehension simply because my opponent has moved into another room or left for good.
>
> The case is the same with philosophy. We hold that it is reason *per se* that is initially dialogic." (Alexandrov & Struchkov 1993, 353)

In the interview, Anatoli Akhutin—the other person being interviewed together with Vladimir Bibler—recalls Plato's well-known utterances about thinking, thought and speech:

> "Thinking, [Plato] says (Thaet. 190A), is 'the talk which the soul has with itself about any subject which it considers'; thus (Soph. 263E), 'thought and speech are the same; only the former, which is a silent inner conversation of the soul with itself, has been given the special name of thought.'" (Alexandrov & Struchkov 1993, 354)

Akhutin also reminds the reader of Kant's words, cited by Bibler in the epigraph to his book "Thinking as Creating" (Myshlenie kak tvorchestvo): "To think means to speak with oneself ..., to be able—by the agency of reproductive imagination—to inwardly hear oneself." (Alexandrov & Struchkov 1993, 354)

With regard to the relationships between truth—or the quest for truth—and dialogue in Bakhtin's philosophy, Bibler summarises the following key viewpoints ...

> "It is emphatically not the case that only an advance in the direction of truth is brought about by means of dialogue, while truth itself is only one, monistic, 'univocal'. Instead, *the very entities we seek to know the truth about are dialogic with respect to themselves. Their very beginning is dialogic.* [emphasis added] An entity is initially not identical with itself, not 'selfsame'. And it is not only that different forms of

> understanding come into collision here, but also that an entity itself, in its existence, is disposed to a certain self-activity, self-change, self-determination. If Bakhtin's dialogism is understood merely heuristically—i.e., if it is considered that we only dialogize while in quest of truth which, once reached, proves to be unambiguous and indisputable—then the whole point of his thinking altogether vanishes. Because the point is not a matter of debates about truth; this is not nearly so important as the dialogic essence of the very ultimate, 'atomic', indivisible truth, of the 'truth-monad." (Alexandrov & Struchkov 1993, 355)

... and goes on to contend that truth is ultimately dialogic with respect to itself, and that therefore truth and dialogue are intrinsically intertwined:

> "[w]hen it is argued that dialogue is important in order that we may eventually arrive at truth, that it is even impossible to arrive at truth without dialogue, but that, once we have come to know that truth, dialogue ends—then, once again, we hear the same 'voice of methodologism'. The case is that truth itself, in its uttermost, indivisible, 'atomic' kernel, is dialogue ..." (Alexandrov & Struchkov 1993, 361)

Akhutin problematises a common request for having some common ground before dialogue can be created by questioning the justification of this common ground:

> "'How is that?', it is often said against us. 'Don't you see that it is necessary to have some common ground, to find some common language, so to speak, in order that conversation and mutual understanding might be possible at all, lest all conversation turn into a sort of «conversation between the deaf»?'—Surely. But a conversation becomes dialogic in Bakhtin's sense precisely when this 'common ground', this basis is called into question, when it appears to be the point at issue." (Alexandrov & Struchkov 1993, 355)

Bibler summarises his view of Bakhtin's dialogism in the following way, underlining at the same time the differences between Bakhtin and himself in that Bibler uses a much broader concept of dialogue than Bakhtin, who deliberately restricted it to the novelistic word:

> "Dialogue in [Bakhtin's] view is—in a strictly conceptual way—confined to that part of the 'spectrum of verbal art' which does not stretch to lyrics on the one hand, and to philosophical-logical discourse on the other. That is, dialogue does not stretch precisely to those spheres where the very source of dialogism is most manifest. Bakhtin assumes—in accordance with the classical, traditional standpoint—that logic is single. In his view, there is, of course, many a consciousness; their plurality is even indispensable; logic, however, is only one—it is mono-logic [hyphenated in the original] 'once and for all'. By virtue of this conception, Bakhtin's dialogue may not arrive at the level of the dialogue of logics, the dialogue of reasons. Bakhtin's dialogue is, indeed, limited--inasmuch as he does not drive it to the idea of philosophical recurrence to the beginning of thought, to the point of the poetical birth of thinking from consciousness." (Alexandrov & Struchkov 1993, 370)

Bakhtin's ideas of dialogue focus on literary texts in the first place. From the point of view of this publication, it remains to be seen whether these principles hold true regarding computer-mediated communication (CMC), which represents a new kind of literary genre. Various tools in the field of modern communication and information technologies, however, offer an interesting challenge to compare with traditional literary *genres*, as we are in the middle of a radical change in how people express themselves through modern telecommunications.

3.4.3 Bibler's Dialogic Culture

Vladimir Bibler was schooled as a historian but he has devoted a great deal of time to the history of science, especially to its philosophical aspect, so his professional interests concentrate upon philosophy in the classical sense. "Bibler did not construct all-embracing schemes, but returned to philosophy its proper historical and cultural individuality, its live polyphony " (Alexandrov & Struchkov 1993, 358).

Bibler himself describes his own philosophical approach as follows:

> "As distinct from comparative studies, ours consisted in elucidating the character of internal relationship between cultural worlds that must exclude one another, that cannot be located (together) in some overall 'scheme of things', some all-embracing Universe. Their community can only be the community of communication; their relationship, dialogue. Thereby the philosophy of culture—understood as the logic of the dialogue of logics, or even as the dialogic ontology of culture—has proved to be, not a particular branch of philosophy, but the very root of its definition—the definition touching the essence of its philosophical undertaking." (Alexandrov & Struchkov 1993, 335–338)

According to Bakhtin's statement from the "Notes of 1970-71" (Bakhtin 1979; cited in Alexandrov & Struchkov 1993, 339), science is a monologue. Bibler represents another and wider interpretation. Dialogue is very central in his thinking. The logical foundations of Bibler's philosophy are named "the logic of the dialogue of logics" or "the dialogic ontology of culture". For Bibler, culture has a special role in our life and for the 21st century. In the following, we will have a closer look at Bibler's notion of culture, as it helps us understand the emerging role of dialogic communication culture.

Central in Bibler's conception is the assertion that each culture, i.e., ancient, mediaeval, modern and present-day, "maintains its peculiar dominant mode of comprehension, its distinctive reason" (Alexandrov & Struchkov 1993, 354), its own logic. Each culture has its answer to the questions: What does it mean to understand oneself, other people, things, the world? In the twentieth century, Bibler says, the cognicing, investigatory reason of modernity, a form of inner microdialogue is transforming itself into a new kind of thinking—that of dialogic reason, reason of culture, where being is understood as if it were a creation of art. (Bibler 1991, 4–9)

The Biblerian definition of culture forms a continuum of three intertwined definitions:

> 1. Culture as a form of simultaneous being and communication of people of different—past, present and future—cultures, as a form of dialogue and of bringing about these cultures.
>
> 2. Culture as a form of self-determination of our life, consciousness, thinking.
>
> 3. Culture as an artistic creation.
> (Bibler 1991, 289–290)

We will focus on the first definition, i.e., on "the dialogic (Bakhtinian) definition of culture" (Bibler 1991, 292) as it adds to our understanding of how a new culture, dialogic communication culture in our case, is brought about and how it exists as a dialogue of cultures.

Communication of cultures in the Biblerian sense is the communication of individuals as personalities, personalities as an actualisation of one's spiritual world, not in the everyday sense of "X is a personality, but Y is not". In communication, the other does not exist for me as an object of my hopes, ambitions and desires, but as an onthologically different personality with actually and potentially different cultures, logics, different notions of truth, beauty and goodness. (Bibler 1991, 297-299)

Bibler emphasises that

> "Communication within culture is not 'information exchange', not 'division of labour', nor 'participating in a joint activity' or in 'mutual enjoyment'. It is co-being and mutual development of two (and many) totally different worlds—different ontologically, spiritually, mentally, physically ..." (Bibler 1991, 298)

It is important to notice that for Bibler, culture, i.e., communication of individuals as personalities, is "their communication as real (and potential) cultures" (Bibler 1991, 298). He continues:

> "This thesis presupposes, first, that culture always exists in the simultaneous 'space' of many cultures; in culture, there is no asynchrony and no 'taking off'". Second, this thesis presupposes that culture's time is *always the present,* that is today, where all past and future cultures communicate and are participants of the dialogue. Now, the real time of being, co-being and communication of cultures is the 20th century culture. Third, in communication each culture realizes itself as separate, original, full and inexhaustible in its uniqueness and eternity. Discussion in a culture always goes on today, but—always—through centuries. Fourth, it is all that just was that is significant in our first argument: communication of cultures and the definition of each culture realizes as … communication of personalities." (Bibler 1991, 298; translated by Mononen-Aaltonen)

"When two cultures meet, several cultures collide" is what happens in dialogic communication. Culture can exist and develop as a culture only at the edge, at the border of different cultures, in the dialogue with each other as separate cultures. Bibler argues that this communication of and bringing about cultures is possible in our culture, in the European culture of the end of the 20th century (Bibler 1991, 286). Culture when understood as a dialogue of different cultures, as communication of individuals as personalities, has a special role in our life and for the 21st century (Bibler 1991, 278).

In the 20th century we are confronted with the realisation that Asian or African cultures are not at a lower stage of the same development we as Europeans have passed, but are different, other. They have other ideas, beliefs and meanings (Bibler 1991, 262). Former social structures and firm social ties, that had supported people as social classes, were destroyed in the world wars and the social revolutions of the first half of our century, resulting in new social formations—small communities (Bibler 1991, 265–267).

During the second half of the 20th century, in the process of the so-called "scientific-technological revolution", the basic form of activity is not within the metacollectives strictly regulated by the division and combination of functions, but within creative small groups in laboratories, experimental departments and research collectives. In these structures, communication becomes the key to social development and to production. Also, characteristic of the new sphere of human activity is its orientation towards the potential of the self, and that of work as changing the self. (Bibler 1991, 274)

> "The basic producer of communication" is not the worker as a collective body, i.e., the industrial hall, the plant, the enterprise, society as a whole with common goals, but an individual, who is free to concentrate on knowledge, skills and human aspirations and creatively change this knowledge and these aspirations into his or her own creations, a discussion partner, who invents new forms of human communication and is able to make better use of its 'old—eternal—forms'." (Bibler 1991, 275–276; translated by Mononen-Aaltonen)

As a result of the "scientific-technological and computer revolution" of the end of the 20th century, the model of elitist communication in science and art becomes part of the microstructure of everyday life for the majority of people (Bibler 1991, 277–279).

In the context of culture, communication is dialogic only when it becomes the source of never-ending development and the formation of new meanings for all those who participate in the dialogue (Bibler 1991, 299). Culture as dialogue presupposes an indivisible unity of two poles: the first pole is the Bakhtinian idea of the dialogic nature of human consciousness; the other, the Biblerian idea of the dialogic nature of thinking and logic (Bibler 1991, 300).

In the Biblerian understanding, dialogue is a universal definition of indivisible origins of thinking. No matter what we think about in the end, the object of our thinking is our own thought and our way of thinking. Thinking is oriented towards the self, but it is not reflection, thought about thought. It is not the dialogue of two thoughts, i.e., reflection, dialogue of two subjects of thought: the I who is thinking and the "second" subject, the "other I", whose possibility and intention of thought I argue. The idea of dialogue as a universal logical idea, as an idea of moving towards the universal not through generalisation, but through the communication of logics, is the idea of culture. (Bibler 1991, 229–232)

3.5 Dialogism and Foreign Language Education

The following two researchers, C. Kramsch and G. Kitaigorodskaya, work in the field of foreign language education. Both have discussed the role of dialogue in their research. We will now present some of their observations and findings with a special view to teaching and learning foreign languages.

3.5.1 Kramsch's Dialogic Experience

Dialogic experience is something that is born when two cultures meet and when a third culture is born as a result of this (Kramsch 1993a, 30). In order to give learners dialogic experiences, we need to create dialogic learning environments and dialogic communities of learners or learning collectives. Kramsch (1993a) herself takes *a philosophy of conflict* as a point of departure, but is quite convinced that understanding and shared meaning are important in the FL classroom and that they are brought about by communication across cultures. This kind of communication calls for cultural awareness, which then contributes to enabling foreign language proficiency. Learners ought to be initiated in the social and cultural meanings embedded in language. They should equally be cognisant of which of these meanings can be made explicitly and which should be understood implicitly. One of Kramsch's arguments is that language is indissociable from the creation and transmission of culture. The FL teachers' task is to help learners develop a cross-cultural personality. (Kramsch 1993a)

Kramsch's philosophy of conflict leads to the classroom drawing its impetus from the tension observed between various oppositions (e.g., psychological, social and linguistic) in conflict with one another for the construction of meaning. The impetus comes from cross-cultural miscommunication. In spite of cross-cultural misunderstandings, languages should be taught as context within a dialogic pedagogy that makes context more explicit, resulting in the dialogic interaction of text and context in the FL classroom. (Kramsch 1993a)

Basing her idea on Bakhtin (1986, 108), Kramsch privileges *double-voiced discourse* (Kramsch 1993a, 27), which requires that we acknowledge the extent to which we echo our social environment, leading to finding new ways of expressing our thoughts in an understandable and original fashion. This process is a *dialogic process* to Kramsch. Dialogues with others facilitate the learners' discovery of ways of talking and thinking they share with others and ways unique to them. (Kramsch 1993a, 27)

Kramsch (1993a, 28–30) refers to Attinasi & Friedrich (1994) when discussing two types of dialogues taking place between ethnographers who try to describe and interpret the culture of a people's speech community and the people from that community. This distinction is important in our argumentation, as it deals with an ethnographic approach which we will introduce later in this publication (Chapter 9). The first sort of dialogue refers to "relatively repetitious, formulaic, routine, even banal and vacuous sorts of dialogues that make up the great majority of conversations … These ordinary dialogues serve mainly to maintain a status quo in friendships, families, and neighborhoods" (Attinasi & Friedrich 1994; cited in Kramsch 1993a, 28).

The second sort of dialogues is much more important and is very much in harmony with the concept of dialogue we are discussing in this publication. These are memorable dialogues, which Attinasi & Friedrich (1994) describe as

> "life-changing dialogues", "catalysts of change between dialoguing imaginations", eliciting a "fundamental realignment and re-evaluation of psychological values in the minds of the interlocutors. They cannot be pre-programmed or prefabricated. Their meaning is hardly or rarely realized at the time but emerges dynamically as they are ruminated on, reduced, expanded, re-actualized, and re-represented, often with reversal or slowing down of tempo, and otherwise transformed through subsequent imaginings". (Attinasi & Friedrich 1994; cited in Kramsch 1993a, 28–29)

Kramsch (1993a, 29) draws the conclusion that in the foreign language classroom we can witness a cross-cultural dialogue, in which both teacher and learners are participants and observers. This cross-cultural dialogue takes place across grammatical exercises, communicative activities, and the discussion of texts. Kramsch (1993a, 29) maintains that the foreign language classroom should therefore be viewed as the privileged site of cross-cultural fieldwork, in which the participants—teacher and learners alike—are both informants and ethnographers. This might lead to two kinds of dialogue: the first consists of an instructional conversation, aiming at form-practising and the *status quo* of the school's educational culture being confirmed. The second dialogue is an exchange of ideas and emotions through language, questioning the status quo of the first type of dialogue. Kramsch (1993a, 29–30) goes on to analyse the five features of this second dialogue as explicated by Attinasi & Friedrich (1994):

> "1. [This second type of dialogue] involves both language and the use of language—that is, it includes not only words and sentences, but all the aspects of speech and verbal behavior that give language its materiality (e.g., pitch, tempo, interactional dynamics, but also discourse style and the logic of conversations).
> 2. It is motivated by ambivalent feelings of both empathy and antipathy. Like all human relations, any dialogue is always, potentially, headed toward harmony or order, or toward

> disorder or chaos. It draws its intensity from the delicate balance it maintains between the two.
> 3. It is empowering. Since two interlocutors are never completely equal and since they are often politically non-equal, such a dialogue involves a fundamental change in power—as the child gradually grows up to acquire the power of this or her parents.
> 4. It can happen unexpectedly in the most unlikely places, during a grammar drill, a vocabulary exercise, or the recitation of a poem.
> 5. It is a 'liminal' experience that creates a special space and time at the boundaries between two views of the world. It involves a sudden grasp of difference and an instantaneous understanding of the relationship between self and other." (Attinasi & Friedrich 1994; cited in Kramsch 1993a, 29–30)

In order to obtain a cross-cultural communicative proficiency, FL teachers and learners need to have enough empathy towards the target cultures. Kramsch (1993b) cites Nostrand's (1991) words about proficiency in a foreign language meaning "effective communication [which] involves not only exchanging verbal messages but creating rapport, eliciting respect and good will". Nostrand also argues that this requires

> "accurate as well as fluent language ... [which is supported by] (1) a knowledge of the culture and society expected of the outsider by a native speaker ...; (2) a knowledge of how to observe and analyze a culture ...; and (3) the sociolinguistic ability to interact, to perceive nonverbal messages."

Kramsch (1993b) concludes that underlying these abilities is an essential prerequisite that Nostrand calls "empathy toward other cultures and perspective on one's own".

Kramsch (1993b) is of the opinion that empathy, albeit important, is not enough. She recommends politeness while underlining the importance of appreciating other cultures and their representatives:

> "Learners could develop the 'capacity to participate in another's feelings or ideas' and gain empathy toward members

> of another culture, but empathy is a personal feeling of solidarity, not a social capacity. When we talk about culture, we are talking about the ability to understand and be understood by others as members of a given discourse community, not as isolated individuals. Rather than the personal term empathy, the correlate social concept of politeness is used here to discuss the ability to see the world from another person's perspective. *The notion of politeness stresses the social nature of interpersonal relationships and their cultural relativity:* [emphasis added] what might be polite behavior to Americans may have a very different value for the French or Germans, even though they may all be empathic individuals." (Kramsch 1993b)

More universal dimensions of politeness have been identified by Brown & Levinson (1978; cited in Kramsch 1993b). These dimensions, while representing a more decentred perspective, allow us to objectify cross-cultural differences. The dimensions include power, distance and degree of imposition, and the different ways they are represented in different discourse communities. We will take up this classification when later contrasting the multidimensionality of dialogue with MICT and mediated communication, to which these dimensions of Brown & Levinson (1978) are directly related.

In short, a new kind of learning culture is bound to emerge if we take into adequate account all challenges of cross-cultural communication, all opportunities offered by an extensive comprehension and appropriation of dialogic principles, and if we make full use of modern information and communication technologies and CMHC.

3.5.2 Kitaigorodskaya School

Dialogic principles in the Bakhtinian sense have been implemented in the work of Professor Kitaigorodskaya (cf. Kitaigorodskaya 1988; 1990; 1991; 1992), particularly in her foci on foreign language education. Dialogic communication is in fact the very basis of her method of activation for FL teaching and learning.

One of her insights is that the success and effectiveness of learning is mostly defined by the closeness of communication and the teaching–learning process. The method, also known as the Kitaigorodskaya School, is based on the recognition that what is central for learning is not the relationship of the learner and the teacher to the subject, for instance a foreign language, but the dialogue that emerges between the learners, and the learners and the teacher because of and thanks to that subject. Dialogue is therefore a tool for organising and structuring this interpersonal process. (Kitaigorodskaya 1992, 63–65)[7]

Kitaigorodskaya realises that her school lacks the dialogic approach to teaching culture and understands what modern information and communication technologies are promising for developing her method further (Kitaigorodskaya 1992, 11). At the same time, however, one must reconsider the pros and cons of distance education, especially from the perspective of inter-learner communication and the closeness of communication and the teaching–learning process.

3.6 The Dialogue Project at MIT

It is worth noticing that developmental work similar to that of the Kitaigorodskaya School was done at MIT, Cambridge, Massachusetts, under 'The Dialogue Project'[8], during 1992–1994. Some of their findings are very close to the insights of the Kitaigorodskaya School. We will finish this part of the publication by presenting some research findings of the Dialogue Project.

The main findings are reported in Isaacs' article (1996), in which he concludes:

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[7] Cf. http://www.online.ru/people/kitsc/.

[8] Cf. http://learning.mit.edu/res/wp/8004.html.

> "At the Center for Organizational Learning at MIT, dialogue is becoming a central component in the creation of a learning organization. Many of the projects now being launched through the Center feature dialogue as a key component." [(Isaacs 1996, 27)

Isaacs (1996) points out one of the salient features of dialogue when he argues that

> "[dialogue] is iconoclastic ... in its continuous invitation to people to live from present experience, not from memory." (Isaacs 1996, 27)

In the same spirit, Kitaigorodskaya (1992) contends that dialogue is a tool for satisfying the spiritual needs of the individual for the other. Dialogue is always geared towards another human being. In dialogue, a human being is no longer a tool but the aim. A teaching–learning process based on dialogue gives one a chance to meet another person on an equal basis. (Kitaigorodskaya 1992, 63–65)

Isaacs (1996, 26–27) equates the evolution of dialogue with a number of other development models and says that each of the stages of the dialogue process apparently contains certain critical elements and forces. Contrary to several development models, which focus on the nature of the interpersonal interactions among the people in the group, in the dialogue evolution model the emphasis is on the nature of the thought processes that underlie what is appearing in the group, the quality of the individual and collective reasoning, and the quality of their collective attention. As an example, Isaacs continues (1996, 27), "one does not seek to 'give feedback' to others; instead one is asked to reflect on one's own impulses and projections—to listen to oneself in essence. Inquiry into the nature of the collective pattern is encouraged, from a stance grounded in one's own experience."

	Instability of the Container	Instability in the Container	Inquiry in the Container	Creativity in the Container
	Initiatory Crises [no decisions, purpose, leader, agenda]	*Crisis of Suspension*)	*Crisis of Collective Pain*)	
		Suspension → [hang in front]	**Dialogue →** [the flow of meaning]	**Metalogue** [meaning moving with, among]
Invitation →	↗			
Conversation → [to turn together]	**Deliberation** [to weigh out] ↘			
		Discussion → [to shake apart]	**Dialectic** [the flow of speech; logical analysis]	
			⇑⇓	
			Debate [to beat down]	

FIGURE 7. EVOLUTION OF DIALOGUE (ISAACS 1996, 26).

The MIT Dialogue Project also identified some critical elements that appear within the dialogue process (Table 1). They speak of a container in which the dialogue takes place. We interpret that the container in the MIT project can be thought of as a context, a situation or, perhaps, as a learning environment. Isaacs (1996, 27) explains how at (I) the instability of the container appears, but that any group of people gathering together carries a latent wish or hope for a new possibility—whether or not there is any possibility that this wish could become reality. Enter Stages II, III and IV:

> "At (II), groups engage in the search for new 'rules', and soon discover in dialogue that there are few rules that accurately convey or constrain the experience. People develop new language and new cognitive perceptions at this stage as well, as they begin to 'go meta', or reflect on the process as it occurs. People also typically engage in what we call 'model clash', entertaining the question 'whose meaning has more power here?'. Reflecting on these polarizations and the

> thinking that underlies them, the impacts they have, and the order between them, are all key elements at this stage.
>
> At (III), we have found groups to emerge into a deeper level of exchange with one another, and have also found regressive tendencies appearing. People create 'idols' in thought out of their experiences, including their experience of dialogue, and then seek to live from that ideal. … We have found that groups struggle with this stage, and are likely to founder here.
>
> At (IV), there is a possibility of a new kind of mind emerging among people, and have some evidence that this can appear among people." (Isaacs 1996, 27)

The real importance of these foundings at MIT is that one becomes conscious of the dialogic process, to better understand the initial feeling of frustration or anger. As Isaacs (1996, 27) puts it, "[m]uch of the facilitation of dialogue involves modeling the behaviors oneself; the premise we hold here is that the nature of the transformation that might occur through dialogue is based on processes that are internal to people. We are changing structures of perception and experience in the dialogue process; hence a facilitator must understand this and operate in this fashion relative to his or her own structures of perception."

The MIT Dialogue Project drew seven main conclusions (key learning discoveries) based on their research findings (Isaacs 1996, 28–29):

> 1) *Habitually maintained boundaries between traditional adversaries can be dramatically transformed, and yet be quite precarious within a larger system.* But it was also noticed, in their steel mill site context, that introducing deep-going changes in one part of a system became quite threatening to other parts.
>
> 2) *Human beings interact within 'fields' of shared meaning.* Human beings live within fields of shared meaning of varying richness, depth and coherence that deeply influences the quality of their reasoning, the nature of their inquiry, the depth of their insights, and the coherence of their actions.

These fields seem to follow orderly, though not clearly predictable patterns of individual and collective development.

3) *Development of a theory of the way dialogue unfolds in time.* Our developmental theory of dialogue contains important new insights about the process by which 'fields' of meaning unfold in time. From this we postulate the presence of forces within these fields that either further dialogue, or further the fragmentation of human experience. These 'anti-dialogue' forces we are finding are particularly evident at one stage of the process, and present very particular requirements to groups and facilitators.

4) *Discoveries about the 'chrysalis effect' and the shared, co-ordinated action that dialogue can produce.*

[As an example, Isaacs mentions how their] healthcare dialogue has begun to foster direct community action, following many years of discord and lack of co-operation. Members are teaching various groups about dialogue, redesigning their entire healthcare delivery system, and reflecting together in a remarkably changed manner. All of this emerged not as a single change but as a 'sea of change' in the entire fabric and quality of the interactions in the overall community. These changes apparently required a 'dormant' period, in which dramatic inquiry and rethinking among the community took place.

5) *Articulation of a new level of learning that enables and sometimes transcends advanced notions of organisational learning now extant.* Dialogue 1) broadens traditional approaches to 'second order' learning, or learning about learning, by extending the process to the entire community in which people operate, and 2) deepens the learning by requiring individuals to reflect on the ways community artifacts exist and are reproduced within themselves.

6) *Discovery of the power of dialogue to produce new insight and intelligence in groups.* Dialogue does indeed carry enormous transformative power for groups of people—our founding insight. Dialogue is not always easily accepted, in that it challenges numerous assumptions about how groups

of people ought to think, make decisions and choices, and learn together.

7) *The articulation of several important "species" of dialogue and important differences in models of how dialogue ought to be practised.* Critical dimensions of forms of group conversations have been developed, as well as different uses of dialogues, and the different types of "fields" or containers that dialogue settings require and create. (Isaacs 1996, 28–29).

TABLE 1. CRITICAL ELEMENTS THAT APPEAR WITHIN THE DIALOGUE PROCESS (ISAACS 1996, 28).

	I. Instability of the Container	**II. Instability in the Container**	**III. Inquiry in the Container**	**IV. Creativity in the Container**

Core Elements	• incoherent tacit background
	• unawareness of tacit background
	• evoking the shared dream or ideal
		• search for new "rules"
		• going "meta"
		• model clash
			• flow of meaning
			• insight
			• regressive tendencies
			  • ideology
			  • in groups and out groups
			  • partial views
			  • self-congratulation
				• conscious emergence of a collective mind
				• breakdown of verbal syntax and emergence of new articulations connected to the felt-sense
				• consciousness of embodied wholeness

Crises	individual suspension: "I am not my point of view"	collective suspension: "We are not our point of view"	fear of collective pain: "facing consequences of having created a world of fragmentation"	
Dominant Emotional Content	Grief	Anger	Fear	Joy

We find the MIT Dialogue Project highly illuminating regarding the inner structures and dimensions of dialogue. We are convinced that some of their findings could be adapted to teacher education programmes in order to ameliorate the educator–student teacher relationships as well. Surprisingly, there is no reference to the work of Bakhtin or Vygotsky in the MIT reports, though dialogue is present in one way or another throughout the work of these two scholars.

4. FROM DIALOGUE AND DIALOGISM TOWARDS LEARNING AND EDUCATION

In this chapter, we will summarise some main points from the previous discussion of dialogue, dialogism, learning and culture. We will also introduce the concept of "addressivity", which is intended to create a mental link to our second focus, i.e., CMC and MICT. We will equally, albeit briefly, talk about why a scientific kind of thinking should be linked to discussion of dialogue and school-going. Dialogue will then be viewed in the framework of self-regulation and self-regulated learning, with a view to educational contexts.

4.1 Three Contexts of Dialogue

The concept of "dialogue" is used in three different meanings and contexts in this publication (cf. also Tella & Mononen-Aaltonen 1997). First, it has been grounded on the Bakhtinian notion of *dialogue as the basis of all human communication and interaction*. In the spirit of the work of Bibler (cf. Bibler 1991), we have expanded it to embrace cultural issues as well. This point of departure will be reflected in our analysis of human-to-human communication (HHC) and computer-mediated human communication (CMHC), to be presented later in this publication (Chapter 5.7.1).

Second, following Vygotsky's cultural-historical theory (1978), we see *dialogue as the key concept in the pedagogical process*. This observation in particular has aroused our interest in developing dialogic communication culture in teacher education and especially in foreign language education. The theoretical framework on which this interpretation is based is Vygotsky's Zone of Proximal Development, which gives ample opportunity to reflect on the teacher–learner interaction, on developmental issues, and on how mediated communication and self-regulated learning interact. Dialogue might be called the "micro-particle of sociality" (Alexandrov & Struchkov 1993, 373) in that it is so closely related to social interaction and to the teacher–learner interaction, crucial to the teaching–learning process in foreign language education as well.

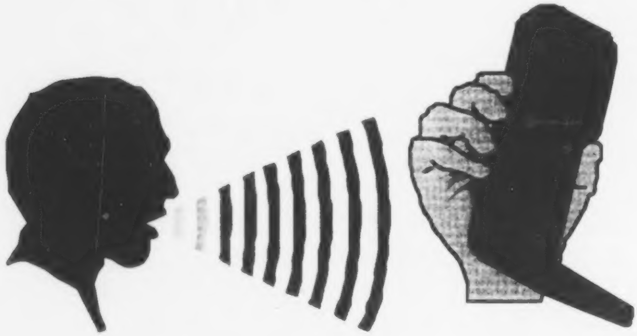
Third, we use dialogue as "*a general definition of indivisible origins of thinking*" (Bibler 1991, 229). In the research project, which we will describe towards the end of this publication (page 125), our special emphasis will be on increasing the students' capacity to act as ethnographic researchers of their own work, viz. developing their processes of thinking. At the same time, emphasis can be directed to enhancing the students' capacity to communicate in a network-based learning environment provided by the WWW and other telematic tools.

Most of what is significant to human beings is in one way or another created through shared talk and negotiated meanings, comprising enormous transformative power as their nature and impact are gradually understood. Deeply connected to this is the recognition of the fact that new dialogic levels can produce new levels of co-ordinated action, especially when working on the Web but equally between human beings. Margaret Mead's apt comment that "a small group of people can change the world; indeed it is the only thing that ever has" has new meaning within our emerging understanding of the power of dialogue.

4.2 Addressivity

As Michael Holquist, a Bakhtin scholar says, "in communication there is no point at which the speaker may be thought of as an isolated entity" (Holquist 1990, 59). It is impossible to say or mean anything without the reciprocating presence of the other. This reciprocating presence of the other is called *addressivity* (or reciprocity), which is present in all our utterances, written or spoken (Pearce 1994, 2–4). The speaker and the addressee are always interdependent.

A telephone conversation could well be used as an example of some principles of addressivity. The telephone as a metaphor for dialogue is more than appropriate in the context of network-based learning, as so many telematic services are based on telephony. Think about the situation where you hear your mother talking on the phone with your brother. You cannot hear what he says, of course, and you are so far from you mother that you hardly hear her words either, but you still hear her voice. Most probably, you can deduce the seriousness of your brother's illness through the way your mother utters the words on the phone.



"I remember exactly how I found out how seriously ill my brother was [...]"

"I didn't hear what he said to my mom. I didn't have to. Dazed, I waited until she had put down the phone."

FIGURE 8. AN EXAMPLE OF ADDRESSIVITY DURING A TELEPHONE CONVERSATION.

Our telephone metaphor can be associated with what Bakhtin (1984) wrote about a conversation in which the words of one of the two had been deleted:

> "Imagine a dialogue of two persons in which the statements of the second speaker are omitted, but in such a way that the general sense is not at all violated. The second speaker is present invisibly, his words are not there, but deep traces left by these words have a determining influence on all the present

> and visible words of the first speaker. We sense that this is a conversation, although only one person is speaking, and it is a conversation of the most intense kind, for each present, uttered word responds and reacts with its every fiber to the invisible speaker, points to something outside itself, beyond its own limits, to the unspoken words of another person." (Bakhtin 1984, 197; cited in Cheyne & Tarulli s.a.)

A telephone conversation, fundamentally a bi-directional exchange of utterances between two persons, intrinsically involves a third as well. In this sense, the traditional models of communication between sender and recipient do not take into account the aspect of addressivity that may embrace other persons in the process of communication. Addressivity also covers those forms of dialogue that include more than two conversants (trilogue, multilogue ...).

One final comment on the metaphor of telephone, inspired by Poster's (1995) reflections on democracy. He argues that what distinguishes the telephone from the rest of the media is its *decentralised quality* and its *universal exchangeability* of the positions of sender and receiver. Poster (1995) concludes that "the only [modern] technology that imitates the telephone's democratic structure is the Internet, ... electronic mail, database and general communication system" (Poster 1995, 25). To our way of thinking, this is a very apposite comment and relates the issue of addressivity as discussed in this publication to the emerging Internet communities or even to the Internet culture as discussed by Porter (1997b).

4.3 Towards Co-Construction of Knowledge via Dialogue

Both Bakhtin and Vygotsky emphasise social factors and the radical significance of education in the development of mental functions, such as thinking. For both thought is inner speech, e.g., Vygotsky called it a "unique form of internal collaboration with oneself" (1987, 273). Vygotsky (1978, 20) argued that "the true direction of the development of thinking is not from the individual to the socialised, but from the social to the individual" (cited in Holquist 1990, 80). Many researchers have underlined the importance of inner speech as a self-regulating function. Tinzmann et al. (1990), among others, write that

> "[t]here seems to be a general sequence in the development of speech for oneself. When alone, very young children tend to talk about what they have done after they complete an activity. Later, they talk as they work. Finally, they talk to themselves before they engage in an activity. Speech now has assumed a planning function. Later they internalize this speech. Inner speech—conversations we carry on with ourselves—begins as a social dialogue with other people and is a major mode of learning, planning, and self-regulation." (Tinzmann et al. 1990)

Five components of self-regulation have been identified: metacognition, learning strategies, motivation/self-efficacy, contextual sensitivity and environmental utilisation/control (Lindner & Harris 1992; cited in Ashman & Conway 1997, 149). Self-regulation and self-regulated learning also seems to be important to be able to cope with academic learning tasks.

What follows from the above is the intriguing question of whether when one is engaged in dialogue, self-regulation can become externalised in ways that are geared towards helping other members of the team to solve a problem one shares with others. If this is the case, then dialogue consists of mutual regulation, which, if shared and done in an understanding atmosphere, represents an ideal form of educational dialogue. The combination of dialogue, scaffolding and tutoring or teaching learners in their ZPD can be achieved in classrooms in which mutual respect and politeness (in Kramsch's [1993b] terminology) reign. One form of class where this kind of atmosphere can be achieved is a collaborative classroom (cf. e.g., Tinzmann et al. 1990), but we believe that each teacher should be aware of the basic principles of dialogism and then be able to ameliorate the atmosphere in his or her classroom.

It seems that the teacher's role in a Vygotskian classroom would be to foster a critical learning environment so that the learner could acquire from the outside the concepts and tools that would transform him or her from within once they would be internalised. What this implies is that language is learnt through social interaction, and it will later and gradually change into a human being's own property. Modern constructivism underlines the learner's role in constructing his or her own knowledge. It could perhaps be argued that Vygotsky privileged *co-construction or appropriation of knowledge*, especially domain-specific intellectual structures, because of his emphasis on social interaction, not only between the adult and the learner but also between the learners themselves. This plane is called *intermental*, i.e., taking place between two or more people, but should finally change into an *intramental* plane characterised by the learner's appropriation of socially learned knowledge (e.g., Smagorinsky 1995, 196). Cole & Wertsch (s.a.) underline the essential presence of a third factor in this process of co-construction: the accumulated products of prior generations, culture, the medium within which the two active parties to development interact. Mowlana (1997, 241) cautions that advances in communication technology will not result in mutually shared images and meanings for any international consensus if they are not simultaneously accompanied by the transformation of values. While agreeing with Mowlana (1997) on the importance of values, we would also point to the concern Penny (1995a, 56) has expressed: "Computer technology, hardware architecture, and software design reify value systems". This phenomenon of *reification* or making something into objects is a hidden threat if the reified objects then start being considered as the primary objects. A better understanding of one's own culture, when combined with more profound knowledge and awareness of the problems embedded in these kinds of viewpoints, however, helps us see if any problems are likely to turn up in this respect.

As a cultural side-step, we would like to combine the above discussion with our own culture, the Finnish culture. It represents so-called "high-context cultures" (cf. e.g., DeVito

1997, 88–89; Tella 1996) in which words and the respect for knowledge have been highly esteemed for centuries.

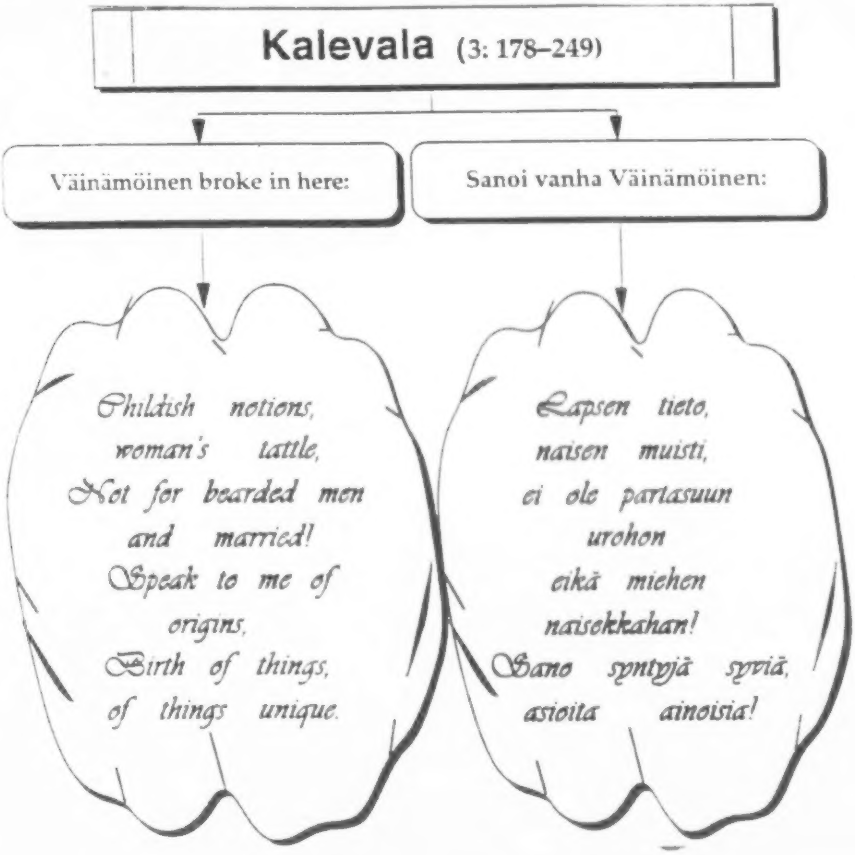

Kalevala (3: 178–249)
Väinämöinen broke in here:
Sanoi vanha Väinämöinen:
Childish notions,
woman's tattle,
Not for bearded men
and married!
Speak to me of
origins,
Birth of things,
of things unique.
Lapsen tieto,
naisen muisti,
ei ole partasuun
urohon
eikä miehen
naisekkahan!
Sano syntyjä syviä,
asioita ainoisia!

FIGURE 9. KALEVALA AND THE ORIGIN OF KNOWLEDGE.

We would cite the words of the Old Sage Väinämöinen (Figure 9), the hero of our national epic Kalevala. Väinämöinen was a real sage on the stage, no guide on the side, undoubtedly! In our quotation, Old Väinämöinen competes in knowledge with Joukahainen, a much younger and inexperienced, showing-off type of man. We find Väinämöinen's words are important in our discussion as they relate to the importance of knowledge construction as the origin of all knowledge. As a matter of fact, Brown et al. (1993, 188) contend that "knowledge is situated in activity ... [and that] ways of knowing are deeply connected to the cultural artifacts of situations, artifacts that include tools and people." In our example (Figure 9) knowledge is clearly situated in action, and Väinämöinen's words are deeply rooted in the Finnish high-context culture.

Väinämöinen's words, dating back to hundreds or even thousands of years, contain real eternal knowledge to anybody, but they are exceedingly significant to educators and to teachers; the origin of all knowledge is the birth of knowledge, the way it is constructed, the way it is built.

4.4 Moving Freely or Mental Mobility

When a person is communicating, it is impossible to think of the speaker as a separate being from the target audience. It is impossible to say or mean anything without the recipient or in general the other person being interactively and reciprocally present. On the other hand, as Kumar (1995, 3) has pointed out, "theoretical knowledge"—the source of value, the source of growth—is probably the most important feature in the information society, in the future society. Therefore, we argue that in a knowledge-based society *"people need to be able to move freely between scientific and other modes of thought, according to the situation and their purposes"* [emphasis added] (Bereiter et al. 1997, 329).

Consequently, we see it as important to encourage students to adopt a kind of *scientific approach to their learning processes*, and, on the other hand, to teaching by underlining the importance of scientific thinking even at the school level. On the whole, we cherish the idea of having an ethnographic approach as a learning method when using the WWW, for instance.

The principles of dialogism help us understand that although communication as such can be independent of distance, time and location (Giddens 1991, 20; Negroponte 1995; Gell & Cochrane 1996), *we as human beings are still* *physically tied to time and* place (cf. also distanciation on page 83). At the same time, we are part of the culture in which we were born and to which we feel we belong. Himanen (1997, 35) also warns that the commonly used slogan of the independence of distance and time might at its worst lead to remote work becoming mentally stressing as it is always present in an individual's consciousness.

The Internet is a good example of an environment where our basic argument (different kinds of modes of thought should be mastered and one should be able to move from one to another) holds true. When we think of the information that the Internet embraces, we soon notice that general-purpose texts and more scientifically oriented articles lie side by side, though, of course, technically speaking, on their own Web pages. However, when one browses through the Web in order to find information about a specific topic, he or she is bound to come across different kinds, brands and types of information. One metaphor that has been used to describe this new situation is A New *Cyberspatial Frontier* (Jones 1997a, 22), which is full of unknown threats but also choices and opportunities. Jones (1997a) elaborates his idea thus: "Hence the great importance of the Internet in contemporary Western society: the Internet constitutes a new frontier, and since it is a cyberspatial frontier it can be conceived as limitless. But it also provides greater opportunity for *social mobility* [emphasis added], for it is a particularly 'human constructed' frontier..."

Jones (1997a) refers to *social mobility*, we spoke about *mental mobility*, and naturally some applications of technology, such as communicators (cf. Media Education Publications 6), enable *physical mobility*. They are all dimensions of the construct "mobility" that is one of the key concepts in the field of technology.

••

In short, it seems more than likely to us that dialogism should be extended to cover most of CMHC as it already covers all human-to-human communication. We argue that if its significance is fully understood, it will first challenge and then change our present understanding of the use, role and relevance of many MICT tools. We agree with Huttunen (1995, 5) who argues that "in the future, nobody can talk about the theory of teaching or the philosophy of teaching without the notion of dialogue".

In the final analysis, our notion of dialogue has come to embrace three aspects:

> (i) the basis of *all* human-to-human communication and interaction.

At the same time, it is

> (ii) the key concept of the teaching/learning process, and
>
> (iii) the close relation to indivisible origins of thinking.

Dialogue comes true through language; thinking, *ab initio,* has been, is, and will always be dialogic.

5. CLASSIFICATION OF MEDIA EDUCATION TOOLS, WITH A VIEW TO DIRECT VS. MEDIATED COMMUNICATION

5.1 Towards a Multidimensional Model

Before starting to analyse the new multidimensional model (Figure 11), we will point to the fundamental difference between communications and communication, as explicated by Mowlana (1997, 240) (Figure 10). He underlines the argument that true democracy in intercultural relations will not take place without the development of communication at a dualistic level: the technical means of communications and communication itself.

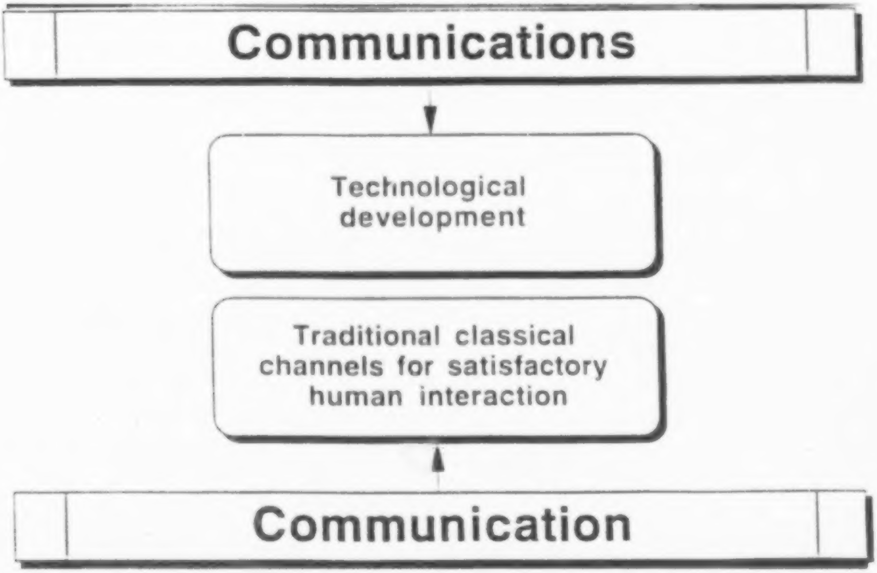

Communications
Technological development
Traditional classical channels for satisfactory human interaction
Communication

FIGURE 10. THE RELATIONSHIP BETWEEN COMMUNICATIONS AND COMMUNICATION (BASED ON MOWLANA 1997, 240).

In Mowlana's interpretation (1997, 240), future intercultural co-operation and conflict will be determined by the relationship between technological development, defined as communications, and traditional classical channels for satisfactory human interaction, defined as communication. In the perspective of this publication, we could also argue that communications is what we will present in this chapter, while communication mostly refers to what has been described in Chapter 4. On the other hand, it should be pointed out that the following pages also include a lot of discussion of human-to-human communication in the same spirit as Mowlana (1997, 240) has used the concept of communication.

In Chapter 2, we presented a three-dimensional model of different communication channels (cf. Figure 3 on page 10), which included some of the key concepts to be used in this publication. However, we anticipated that the three dimensions would not be enough to highlight the multifaceted situation we now have, as far as most MICT and CMC tools are concerned. In this chapter, we intend to elaborate that model onwards towards a multidimensional conceptual framework, in order to get a picture of the technologies we have at our disposal and in order to contrast computer-mediated human communication (CMC) with human-to-human communication (HHC), with a special view to what has been said about dialogue and dialogism in the preceding chapters. (A draft version of this model is in Tella 1997d, 24; *http://www.helsinki.fi/~tella/multidimensio.html*.)

The new multidimensional model (Figure 11) consists of the following dimensions or "channels":

> (i) The primacy of communication, divided into direct communication and mediated communication.
>
> (ii) The directness of addressivity, divided, on the one hand, into direct addressivity and mediated addressivity, and, on the other, into primary addressivity, secondary addressivity and tertiary addressivity.

(iii) The directionality of communication, divided into unidirectionality, bidirectionality and multidirectionality.

(iv) The dominance of voices, divided into monophony, stereophony and polyphony.

(v) The question of time and immediacy, i.e., synchrony ("on-line") or asynchrony ("off-line).

(vi) The nature of communication, divided into human-to-human communication (HHC) and computer-mediated human communication (CMC).

This multidimensional model (Figure 11) is complemented with a number of examples of tools, media and programs that are situated in their respective locations according to their salient features as assessed by us. The various dimensions embedded in the multidimensional model will be described and links made to the ideas presented in the previous chapters.

5.2 The Primacy of Communication

In our model (Figure 11), communication has been divided into direct communication and mediated communication. The criterion for this division is simple at its face value: communication is direct if it is, for instance, face-to-face type of communication, synchronous, and it occurs between human beings. Communication is mediated if a technology—old or new, traditional or modern, conventional or hypermodern—is being used.

5.3 The Directness of Addressivity

In this classification, addressivity (Chapter 4.2) consists of various dimensions.

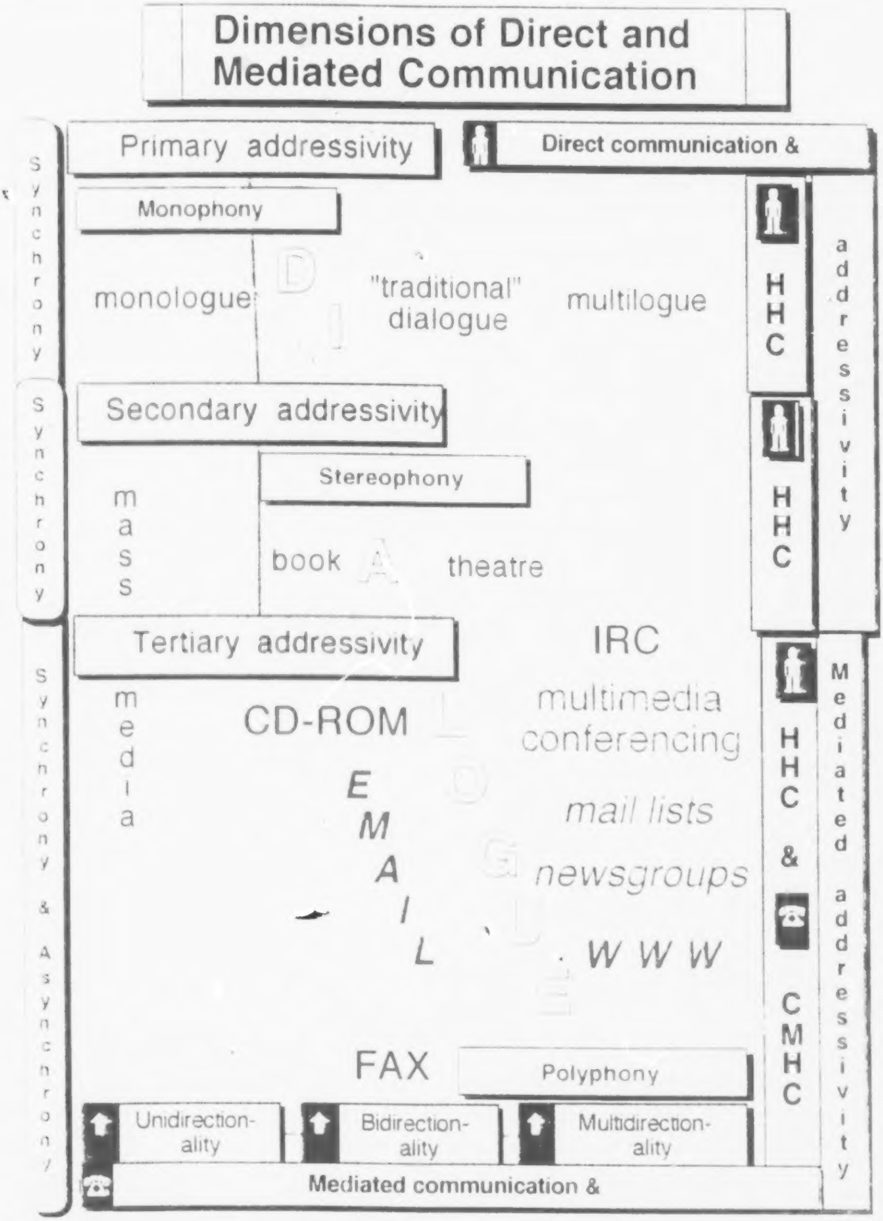

Dimensions of Direct and Mediated Communication
Primary addressivity
Direct communication &
Monophony
monologue
"traditional" dialogue
multilogue
HHC
addressivity
Synchrony
Secondary addressivity
Stereophony
mass
book
theatre
HHC
Synchrony
Tertiary addressivity
IRC
media
CD-ROM
multimedia conferencing
EMAIL
mail lists
newsgroups
WWW
DIALOGUE
FAX
Polyphony
HHC & ☎ CMHC
Mediated addressivity
Synchrony & Asynchrony
Unidirectionality
Bidirectionality
Multidirectionality
Mediated communication &

FIGURE 11. DIMENSIONS OF DIRECT AND MEDIATED COMMUNICATION (BASED ON TELLA 1997d, 24 BUT MODIFIED).

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First, it is used to mirror the opposite roles of direct addressivity *vis-à-vis* mediated addressivity. Second, the concept itself is divided into three levels or layers of reality that reflect the temporal dimension (synchrony vs. asynchrony).

The role of addressivity is exceedingly important as it permeates two other constructs in this model, viz. the role of time and the role of human vs. machine.

Direct addressivity complements direct face-to-face communication, but its role is to emphasise the reciprocating presence of the other(s), the interdependency between the persons involved in communication. Addressivity is closely linked to our ideas of dialogism, comprising dialogue which is being conducted in shared understanding.

When addressivity of communication is analysed in the continuum of primary, secondary and tertiary addressivity, a few problems arise. *Primary addressivity* is relatively clear to define. It only concerns human communication, in real time, and in face-to-face communication situations. Therefore it consists of, among other things, monologues, "traditional" dialogues (i.e., conversations in everyday situations, without any scientifically defined context), and multilogues or group discussions.

Secondary addressivity is also concerned with human-to-human communication, in real time (synchronous), but is limited to more specialised occasions, all of which still call for human-to-human contacts. A good example of secondary addressivity would be theatre as an oral presentation. The actors and actresses interact with the audience, who sit through the performance in real time, but still, in most cases, lack the freedom to express themselves in the same way as in primary addressivity situations. Naturally, the theatre company might try to "activate" the audience to react in more than one way, but in a typical case, the audience is more or less bound to just react by using a very parochial choice of expressions, both verbal and non-verbal.

Books, cassettes, minidiscs amd videotapes, for example, are slightly more problematic. Technically speaking, they are all media quite familiar to most. Therefore, they should belong, *à la rigueur*, to tertiary addressivity or, in other words, to mediated tools. We, however, defend their location under secondary addressivity, as books, cassettes, papers and journals can be regarded as tools and media that most people know and have perhaps used for years. The distinction here is between "old, traditional, well-known" (mostly printed) media in comparison with "new, unconventional, less familiar" electronic or telematic tools and media that are located under tertiary addressivity.

Basically, the question is of interpretability. For instance, the way to locate books in this classification depends a great deal on how reading itself is understood, whether it is seen as an interaction between the reader and the writer, or as a text, or as an eternally renovating and ongoing process of deconstructing and reconstructing the text and its meaning in the mind of the reader. Even if these kinds of reflections are most important, they are off the point in this context and will not be elaborated.

In our model, *tertiary addressivity* is concerned with telematic or "digital" new media that enable mediated communication between human beings. Our main interest lies in this category and we will try to interlink these aspects with what was said about dialogue in Chapter 4.1 in particular. Based on our analysis of different layers of addressivity, we have started to think that tertiary addressivity is gradually approaching primary addressivity, thanks to an ever increasingly growing user-friendliness of telematic tools and services. Surprisingly, direct and mediated communication approach each other as technology and communication merge.

Mass media are located under secondary and tertiary addressivity, as their role is changing. In their traditional format, as printed script, they belong to secondary addressivity. Quite a few newspapers and magazines, however, come out in a digital form as well, providing their readers with an option. Pavlik (1996, 62) speaks in favour of an ongoing and extensive adaptation process to the new delivery media that "old" mass media will have to start in order to survive.

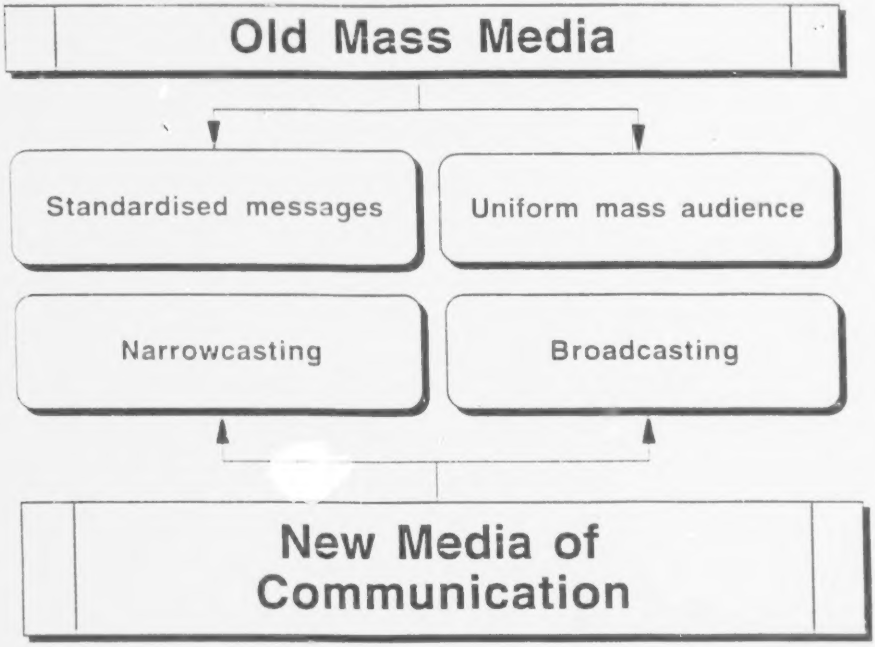
Old Mass Media
Standardised messages
Uniform mass audience
Narrowcasting
Broadcasting
New Media of Communication

FIGURE 12. OLD MASS MEDIA VS. NEW MEDIA OF COMMUNICATION (BASED ON KUMAR 1995, 10).

Digital media is used here as a more generic term to refer to modern realisations of media[9]. Being digital also means being connectable (e.g., Penny 1995b, 1). Kumar (1995) considers this difference not only quantitative but also qualitative (Figure 12). According to his idea of *the age of the de-massified media,*

> "the old mass media transmitted standardized messages to uniform mass audiences. The new media of communication

---

[9] "Digital media" is usually translated into Finnish as *digitaaliset mediat*, although a new term *uusmediat* (literally: new media) is gaining even wider currency. Both refer to electronic and telematic media, with an emphasis on the digitisation of information which is enabled by these media.

> allow 'narrowcasting' as well as broadcasting. … Information can be processed, selected and retrieved to suit the most specialized, the most individualized requirements". (Kumar 1995, 10)

In this context, narrowcasting refers to the same phenomenon we have called "small group and target group" communication (page 11). Castells (1997, 321) gives a vivid picture of the various ways narrowcasting of messages to certain areas or social groups can be used in politics.

The telephone itself is problematic, as most of the latest telematic tools are based on telephony. Yet as a tool of communication, it is one of the oldest. However, the face-to-face contact is missing and therefore it could be located at the tertiary addressivity level.

On the whole, addressivity forms a continuum, not an absolute scale. Examples have been given to illustrate some stages on that continuum. What is also certain is that there will be considerable changes in this dimension—as well as in others—of this model, as technology is advancing at an amazing speed.

5.4 The Directionality of Communication

This dimension of the multidimensional model consists of three levels: *unidirectional, bidirectional and multidirectional.* If communication goes, or is expected to go, in one direction only, it is unidirectional (monodirectional, "one-way"). A monologue is given as an example; it really does not have any addressee but oneself. In this sense, unidirectionality represents intrapersonal speech. Still, monologue can also refer to artistic presentation addressed to an audience. Communication is then unidirectional, but addressivity of a secondary level. Traditional mass media represented this kind of communication, as the readers or listeners were not in the situation to answer back to the media, not easily at least.

Bidirectional communication goes in two directions, it is "two-way", messages come and go. In our classification, traditional dialogues belong to this category, as well as books in the sense that they imply an ongoing dialogue between the writer and the reader's mind and imagination.

CD-ROMs are typical digital media, usually addressing one user at a time but more and more frequently also giving the user an option to interact with the program.

E-mail (electronic mail) is one of the best examples of bidirectional mediated communication tools (cf. e.g., Pavlik 1996, 167). It is based on telephony, is bidirectional and represents tertiary addressivity. It is true, on the other hand, that e-mail too has features that transfer it towards multidirectional communication. Mail lists and newsgroups are examples of multidirectional mediated communication, based operationally on the principles of e-mailing and, technically, on telephony.

Multidirectionality, as already mentioned, consists of decentralised communication that goes in many directions. Not all directions need be activated at the same time, but they are virtually present and can be generated at any single time. The World Wide Web (WWW) is at present the best-known example of mediated communication that profits from multidirectionality to the utmost. Pavlik (1996, 199) refers to *an n-directional space*, which is a vivid metaphor about the enormous dimensions accessible through the WWW. We feel tempted to quote Shakespeare's *Othello* about the enchanting character of the WWW: "'Tis true, There's magic in the web of it." As early as 1970, Illich in his classic book "Deschooling Society" (1970/1996) wrote about "educational *webs* [emphasis in the original] which heighten the opportunity for each one to transform each moment of his living into one of learning, sharing, and caring" (Illich 1970/1996, vii–viii). Shakespeare and Illich, of course, spoke of webs different from the Internet or electronic networks in general. However, the metaphor of a web is exceedingly powerful and it would now be appropriate, especially from an educational point of view, to refer to network-based learning (NBL), which makes good use of most of the features embedded in this part of the model (cf. e.g., Tella 1997a; 1997f).

A number of other applications are mentioned in the model, such as multimedia conferencing and IRC. IRC (Internet Relay Chat) is one of the real-time, "on-line" tools available on the Internet, enabling real-time communication in multiple directions by means of telecommunications. Multimedia conferencing refers to audioconferencing, computer conferencing, videoconferencing and audiographics. Multimedia videoconferencing is used here to refer to ISDN-based videoconferencing, as well as to desktop videoconferencing. Audiographics is partly being replaced by shared whiteboards accessible on the Web or through special software applications.

5.5 The Dominance of Voices

One of the dimensions in the model is concerned with the dominance of voices, i.e., the question is how many voices (persons) are allowed to be present in the communication situation. This category is equally related to the issues of power, the human potential, and the relationships between an individual and the surrounding society. This dimension is divided into monophony, stereophony and polyphony.

Monophony refers to the communication situation in which just one voice is expressed or allowed to express itself. Monologue is by definition an example of monophony. Monophony can relate to explicit unidirectional (univocal) communication, with no other human beings present. But it can also refer to communication situations in which two or more people are present, but for reasons of power, authority and fear, only one voice is expressed. Educationally, this kind of situation is not very fruitful.

If two voices are expressed or allowed to express themselves, we are at the stereophonic level, indicating that the "vicious circle" of monophony has been broken. In its basic form, stereophony describes a dialogic situation. But it only becomes dialogue in the dialogic sense if the two persons involved in the communication act observe and respect the rules of dialogism. The main principle is the mutual trust, shared comprehension of the situation as dialogic and a conscious effort to achieve something together.

Polyphony refers to several or many voices being expressed during the same communication situation. This is very much the same idea that Bakhtin called "multivocality". Wertsch, Del Río & Alvarez (1995, 3) speak about "multivoicedness" in the context of a sociocultural approach. Tella (1997d) has argued that

> "polyphony amplifies the dominance of voices, containing more voices, each of which, at best, has a role to play in the communication situation. It is interesting to compare this aspect with the concept of 'polyphonic sound' (cf. e.g., Geertz 1988; Hess 1989; Johnston 1990) that is used in qualitative research reports to decrease the first person or 'I-witness' perspective dominance and to give more authenticity to the report." (Tella 1997d, 25)

Polyphony seems to be used quite extensively in technology-rich learning environments, for instance in those characterised by network-based learning (NBL) tools. This kind of approach to teaching and learning a foreign language so far has not been easy to implement, but the latest developments of information and communication technologies provide teachers and students with better and more powerful and effective tools to go telematically "multidirectional". The use of various communications channels (like e-mail, fax, the WWW and multimedia conferencing) also contribute to "high communication proximity" (Rogers & Kincaid 1981), which is likely to guarantee a well maintained communication link.

The shift from computer-based education (CBE) to network-based learning (NBL) (cf. Tella 1997a; 1997f) has meant the emergence of groupware, shared expertise, cultivating different types of specialities, which could be seen as a typical dialogic feature in which individuals get more empowered and in which the principle of growing individualism can be thought highly of. At the societal level, but addressing individual users as well, this might lead to a certain kind of an intellectualisation process which Eraut (1991) speaks about:

> "In a more intellectual milieu, the concept of information society ... implies an awareness that there is a *process of intellectualization* in modern societies which requires increasing numbers of persons to possess a stock of knowledge enabling them to make creative use of the enormous potential of information. This is being made possible by computing being introduced into all walks of life and by the media playing an ever greater role in the social and cultural environment." (Eraut 1991, 4)

We have argued earlier in this publication (page 64) that students and teachers alike should be able to switch back and forth between a scientific mode of thought and other more everyday-based modes. In our opinion, the intellectualisation process mentioned in Eraut (1991) is something that acts in the same direction. In connection to dialogue, an intriguing question arises: whether this intellectualisation process could facilitate dialogism, or the other way round—could dialogism facilitate this kind of an intellectualisation process?

It might be tempting to claim that in CMHC, everybody seems to have an equal opportunity to make his or her voice heard. Not everybody will, however. Some prefer to lurk, i.e., just to read messages sent by others but not to take an active part in the discussion themselves. One might also argue that certain voices are always privileged over the others, even in newsgroups, mail lists and in interactive two-way videoconferencing. What we need to do is also to listen to those whose voices are not usually heard in classrooms, like shy and introvert pupils. They might find it conforting to be able to speak out or even cry out in telematic communication. And in addition to that, dialogue is a sensitive concept. It implies respect for other people's opinions, no matter how eccentric they might first appear. Many educationalists agree that disagreeing opinions or disruptive voices may contribute to the unmasking of our routine practices or even our belief systems. Nothing can be more harmful to a budding dialogue than an authoritarian tone of voice that states that all you are talking about was discussed as early as 20 years ago, why bother any more? In the true spirit of dialogism, every dialogue is a new dialogue and should not only tolerate but cherish the exchange of ideas, opinions and feelings between the persons involved.

The dominance of voices is connected to the issue of power. The basic argument is that in monophony, all or most of the power hidden in the communication situation is in one person's hands. The question then is of almost totalitarian use of power and imposition on others. In stereophonic communication situations, some of that power has been delegated to others than the sender of the message. In polyphony, in the best of cases, power is evenly distributed among the participants in the communication situation. On the networks, for instance, there are no real centres of power; all users can have their fair share. Mitra (1997, 73–74) argues to the effect that traditionally, hegemony was produced by gaining the consent of the masses, but that this principle becomes unimportant in the electronic space because the traditional centres of power disappear on the Internet, on which power of any kind, be it coercive or non-coercive, is only manifest in the texts that are produced by its users. In fact, Mowlana (1997, 199) argues that emerging networks on the international communications level, like the Internet, have the capacity to challenge as well as to reinforce the existing social, cultural, economic and political systems. Consequently, instead of the power coming down as a top-down process, these new communications networks have an effect as power on their own towards different layers of reality in society.

Naturally, the situation is more complex than this. There are restrictions and limitations mostly due to technical resources or facilities accessible to the users. Some authorities in some countries may have wanted to increase their control regarding some of the services. Even in school contexts, there is an increasing tendency to filter out some services for educational purposes. In these cases, power and responsibility are interlinked, something is done as it is deemed morally or ethically justified to be done. Fundamentally, the question is of electronic democracy and freedom of speech (cf. e.g., Raab et al. 1996), and, as Fernback (1997, 46) notes, the CMC collectivity is concerned with censorship and other types of restrictive regulations in cyberspace. At the moment, however, we can generally speaking claim that a most polyphonic situation reigns in the field of mediated communication, especially on the Internet and on the Web. Some have even felt the impulse to call it cacophony: "The Internet space is indeed a cacophony of voices, all of whom feel empowered, and the traditional definition of dominance becomes nearly inapplicable to this community" (Mitra 1997, 73).

Balle (1991) speaks firmly in favour of the choices new telecommunications give to its users:

> "Thus, the order of any media-rich society will henceforth follow this two-fold trend, under the influence of the combined effects of technologies and the utopias they inspire: on the one hand, a preference for telecommunications rather than television broadcasting; on the other, the possibility more liberally offered to each individual to choose social attachments other than those imposed upon him or her. There is a two-fold tendency, or rather additional possibilities given to people to express themselves or gain access to the words and works of others." (Balle 1991, 97)

Educationally, some concerns have been expressed during the past couple of years related to some uses of the Internet. Two of these concerns are illustrated by Balle (1991), first, the issue of *Ersatz*, second, the *utopia of universal acquaintance.*

> "'Remote presence' comes up against the same limitations and harbours similar dangers: telephone and videophone do not merely provide a way of breaking the feeling of separation from another; they also constitute a convenient *Ersatz*, a way of escaping contact with others or a variously successful compensation for encounters people fear to seek lest they should fail or prove elusive.
>
> Such is indeed the paradox of the media: they throw man back on himself, while at the same time opening up remote access to the words, actions or works of others. Telecommunication, easier and more varied than ever, has given birth to the utopia of universal acquaintance and communication of each with all. And the dream of a universal and liberating communication nurtures, in the same proportion, the obsession with useless knowledge and abortive exchanges with our fellows." (Balle 1991, 95)

Balle (1991) cautions against mediated communication channels becoming too compelling to some children so that genuine human-to-human communication is hampered. Pavlik (1996, 170) reports about the addictive experiences certain MUDders (players of MUDs; cf. page 109) have witnessed. This is a serious question to be taken into account and to be thought of in all earnest. Jones (1997a, 15) expresses this worry in a vivid way:

> "Are we to simply move on to another 'project', as if life were simply a series of them? To do so is to give in to the industralization …, and it is a sure way to narrow the options the Internet may bring for social relations. Though action and activity may bring their satisfaction, what of sustained, reflexive, personal intimacy? Internet users ought to shout this question loudly." (Jones 1997a, 15)

Sterling (1997) is equally concerned:

> "The good news is that I can chat with distant strangers. The bad news is that while I'm on the Internet, I'm not chatting to my next door neighbor. I'm not going to any neighborhood rallies, I'm not throwing parties for local friends. I'm not babysitting other people's kids. It may be that I'm not even

> talking to my own children, who are off in the living room being raised by Nintendo." (Sterling 1997, 29)

Mowlana's analysis (1997) is equally pessimistic and desolate:

> "Today, in many industrialized societies, the media (especially television), peer groups and bureaucracies (same-age groups and working cliques), and loneliness accompanied with boredom have replaced parents, relatives, neighbors, and other caring adults. … In the age of cybernetics and our highly technological society, the process of personal orientation and self-discovery is becoming not a luxury but a necessity." (Mowlana 1997, 238–239)

Mowlana's recipe is clear: we should "promote interpersonal communication by facilitating more interaction among people rather than narcotizing them through mass-distributed programming" (1997, 245).

What about Balle's (1991) utopia of universal acquaintance with everybody now that telematics give us access to the vast amounts of information on the web? This issue is indirectly linked to dialogism and certainly includes aspects that should be discussed openly. On the other hand, it can be taken for a metaphor of an information-rich society which opens up new horizons, new contacts and new ways of communication.

One more concern is related to the fact that the Internet contains masses of information, it seems a cornucopia of opportunities. However, if teachers only rely on their pupils' own strategies of information retrieval and management, the concern is that this might lead to what Underhill (1989, 254) called "abdicated power", i.e., while the teacher attempts to yield some of his or her power to the students, if too much of it is given, students cannot make good use of it but rather get stressed or worried about the power they have been delegated. In the case of the WWW, this might happen if the teacher thinks that the Web takes care of the teaching–learning process.

5.6 The Question of Time: Immediacy or Delay

"We are embodied time, and so are our societies, made out of history." (Castells 1996, 429)

5.6.1 Synchrony vs. Asynchrony

This dimension is concerned with the synchrony–asynchrony antinomy. Tella (1997d) has earlier characterised this dimension as follows:

> "[The question is] whether the tools being used compel [people] to use synchronous (on-line) communication or whether they allow asynchronous (off-line, delayed) communication. Communication basically is firmly time-focused, but modern communication and information technologies have made man independent of time and space in this respect. The question of whether this independence changes the fundamental character of communication is another crucial issue to reflect upon." (Tella 1997d, 26)

The question of immediacy and delay is important. Human-to-human communication has always been synchronous, taking place at the very heart of the communication situation. Therefore, time and space have always been united in human-to-human communication. Castells (1996, 376) calls space and time "the fundamental, material dimensions of human life". Among the very first, Giddens (1991, 20), started to speculate about the *separation of time and space*, in which the condition for the articulation of social relations could cross wide spans of time-space, up to and including global systems. Giddens (1991, 23) also acknowledges that "for human life, language is the prime and original means of *time-space distanciation*, elevating human activity beyond the immediacy of the experience of animals". Giddens (1991, 25) maintains that some early media, like newspapers, contributed to complete the *separation of space from time*.

However, we believe it is still only through technology that human beings have become able to use "delayed" communication modes. The synchronous communication patterns lie very deep in us, so that multimedia conferencing, e.g., videoconferencing, makes most participants get slightly restless in the beginning, as the rate of mediated communication is remarkably slow when compared with ordinary face-to-face communication. Videoconferencing represents one media which uses a different time code from ordinary everyday speech patterns. Undoubtedly, as technology advances, the delays caused by technology will dwindle and finally disappear, but at present they are worth taking into consideration when planning a videoconference session, and especially when expressing oneself during a videoconference.

IRC (Internet Relay Chat) is an opposite example of tools that can accelerate the speed of communication. IRC software has so far been text-based, but the user can take part in as many chat sessions simultaneously as he or she wishes. The replies of other persons appear on the computer screen as they have been sent, which might lead to seemingly disjointed dialogue or multilogue that the user has to follow while at the same time reacting to somebody else's question already asked several other replies back. This kind of communication is clearly multidirectional and very polyphonic. It has been suggested that in IRC the young are fascinated by the tempo of communication and tempted by the challenges brought about by multi-channel communication. Teachers seem to be rather non-committal in their attitudes to IRC. Even foreign language teachers do not really seem to be keen on adopting IRC in their teaching (cf., however, e.g., Tella 1994b; Investing in Knowledge: The Integration of Technology in European Education 1997). The fascination of immediacy is also embedded in the LIVE Project (cf. Media Education Publications 6) in the form of mobile telecommunications (physical and mental mobility).

Even if our intention here is not to analyse e-mail in great detail (for a closer analysis, cf. e.g., Tella 1991; 1992a; 1992b), we add one comment to the previous discussion. As to time, e-mail enables both delayed asynchronous off-line communication and immediate synchronous on-line communication. The former type is more typical of e-mail, though. Messages can be read and answered at the rate the recipient finds appropriate. One can, for instance, first reflect on one's reply before uploading and sending it. In this sense, e-mail is a telematic tool that is related to dialogism, because proper dialogue always takes time, it needs time for reflection, it needs time for things to grow and develop, it calls for that kind of speed and rate that the communicators see as good. On the other hand, e-mail often includes technical facilities to enable on-line discussion through various techniques and software. IRC is in fact one mode of e-mail-based real-time discussions.

5.6.2 Temporal Communication

Time and communication together form temporal communication. Based on Bruneau (1985; 1990), DeVito (1997, 164) focuses temporal communication (or chronemics) on "the use of time—how you organize it, how you react to it, and the messages it communicates". Temporal communication consists of several aspects, i.a., cultural and psychological time.

5.6.2.1 Cultural Time

Cultural time is divided into technical time, formal time and informal time. Formal time refers to how a culture defines and teaches time. Most Western cultures divide time into seconds, hours, days, months, etc. In some other cultures, phases of the moon or the change of the seasons might be more important. Formal time units are arbitrary, only defined by the culture for its convenience. Informal time is concerned with individual interpretations of formal time (e.g., "soon", "immediately", "tomorrow" have different meanings in different people's—and peoples'—minds). (DeVito

1997, 164) The computer, however, thinks in nanoseconds, in thousands of microseconds, as Kumar (1995, 11) has put it, setting us to think whether this will change our traditional cultural time as well.

Interculturally, another division of time is *monochronism* and *polychronism*. Hall & Hall (1987; cited in DeVito 1997) explain these two in the following way:

> "Monochronic people or cultures (the United States, Germany, Scandinavia and Switzerland are good examples) schedule one thing at a time. Time is compartmentalized; there's time for everything and everything has its own time. Polychronic people or cultures (Latin Americans, Mediterranean people, and Arabs are good examples), on the other hand, schedule a number of things at the same time. Eating, conducting business with several different people, and taking care of family matters may all be conducted at the same time. No culture is entirely monochronic or polychronic; rather, these are general tendencies ..." (Hall & Hall (1987; cited in DeVito 1997, 164–165)

DeVito (1997, 166) has summarised some of the research findings on monochronics and polychronics in Table 2.

It is understandable that Table 2 only gives a generalised picture of the two far ends of the same continuum. In most cases, people might have traits of both groups. However, it is important to be conscious of the potential threats to cross-cultural communication if a deeply monochronic person and a deeply polychronic person try to establish a contact between themselves. Furthermore, some of the telematic tools might try to "extract" from the user features belonging to the polychronic side, for instance. Tella (1992c) has argued earlier that there might be a noticeable difference between the teachers in their 40s and 50s when compared to students in their 20s, as far as their general life styles and their ways of looking at their psychological time are concerned. Young people's way of looking at life might be considered more composite or multi-channel—they tend to do many things at the same time, e.g., studying, having an odd job here and there, going steady—while the older generation lived up to studying hard first, perhaps denied themselves some luxuries while preparing for the active work life. Perhaps, fundamentally, the question is of a change from a monochronic conception of time towards a more polychronic idea of time?

TABLE 2. MONOCHRONIC AND POLYCHRONIC PEOPLE (DEVITO 1997, 166).

The Monochronic Person	The Polychronic Person
• does one thing at a time	• does several things at one time
• treats time schedules and plans very seriously; they may only be broken for the most serious of reasons	• treats time schedules and plans as useful (not sacred); they may be broken for a variety of causes
• considers the job the most important part of one's life, ahead of even family	• considers the family and interpersonal relationships more important than the job
• considers privacy extremely important, seldom borrows or lends to others, works independently.	• is actively involved with others, works in the presence of and with lots of people at the same time.

5.6.2.2 *Psychological Time*

Psychological time refers primarily to the importance one places on the past, present and future. If a person has a past orientation, he or she relives old times and regards the old methods as the best. If one has a present orientation, he or she lives in the present, not for tomorrow. If one has a future orientation, one looks forward and lives for the future. (DeVito 1997, 167) The concept of time is, equally importantly, linked to the concept of appropriateness, most often to promptness or lateness in responding to letters or e-mails, returning telephone calls, etc. DeVito (1997, 167) suggests that the appropriateness of time could be analysed by using scales like interest–disinterest, organised–disorganised, considerate–inconsiderate and sociable–unsociable. We already mentioned that Kramsch (1993b) talks about the dimension of politeness in the same way in order to objectify cross-cultural differences. These dimensions also imply power and degree of imposition.

We have dwelled on these classifications for a while, as we feel that especially in intercultural or cross-cultural communication via telecommunications, a good understanding of these differences is of uttermost importance. Not realising or not knowing of these differences is bound to lead to miscomprehension, misunderstandings and, in all probability, to hurt feelings. And, in e-mails for instance, these may lead to flaming and to flame wars, in which one says more and vents anger more openly than is intended and gets back even sharper retorts (cf. e.g., Tella 1992b, 191; Mitra 1997, 59). Millard (1997) gives a vivid picture of some of the reasons why flaming so easily takes place on the Internet:

> "This metacommunicative minimalism, in combination with other distinct features of Internet writing—the customary economic constraints on connection time (and thus on personal patience), the delayed response of the audience, or the uncertainties ensuing from the consciousness that Internet communities are new enough to lack clear social protocols—as well as the general underlying tension between conceptions of language as a transparent medium for serious work or a dense material for ludic performance—implies that on-line academic writing as a genre is conducive to anxiety, wrath, and vendetta. Flaming, in short, is exuberantly overdetermined." (Millard 1997, 147)

When dialogic communication is tried and aimed at in intercultural communication, issues connected to different conceptions of time might be most relevant. Another example that has already been witnessed in some European Union based projects is related to organising multimedia conferencing, especially videoconferences between partners in several countries. Organising a videoconference session between two or more groups of students or teachers from several countries is severely handicapped or jeopardised if even one of the participating groups shares a completely different conception of time and does not care about common planning, timing or general set-up of the session.

5.6.2.3 *The Internet and Time*

The research literature discusses the concept of time in relation to the Internet to a growing extent. Jones (1997b, 12), for instance, claims that the Internet has a bias towards time, but not space, though the Internet's principal and popular definition is as a "cyberspace". Jones (1997b, 13) cites Rifkin (1987) who more than a decade ago wrote about time and the computers:

> "The computer is a form of communication like script, print, and the telephone, but it is also a time tool, like the clock on the wall. ... As a timepiece, the computer ... establishes a new set of accelerated temporal demands on human behavior. ... The ability to intuit the proper sequences of behavior, knowing how long things should be ... becomes difficult and strained." (Rifkin 1987, 27–28)

It is easy to imagine how much technical development has taken place with the emergence of the Internet, so it is more than plausible that the demands imposed on us by the Internet are higher than a decade ago. Urry (1985) argued that space and time are social constructs whose very existence depends on the interactivity between presence and absence (Fernback 1997, 36).

Castells (1996, 446) has proposed a hypothesis that the network society is characterised by the breaking down of rhythmicity, either biological or social, associated with the traditional notion of lifecycle, but so far no alternative sequence has been suggested to replace the old notion. He further characterises the time conception of the new network society as simultaneous and timeless, and he comes to the conclusion that it is *a culture at the same time of the eternal and of the ephemeral*. Eternal refers to reaching back and forth to the whole sequence of cultural expressions; ephemeral because each sequencing depends on the context. (Castells 1996, 461–462; also Castells 1997, 125)

Kumar (1995, 10) has argued that the information technology revolution has compressed time and space into a new 'world *oikoumene*'[10], which is strongly orientated towards the future, while past societies were mostly space-bound or time-bound, leading to a radically new space–time framework for modern society.

In our multidimensional model (Figure 11), the question of time is presented in the form of an opposition synchrony vs. asynchrony. Synchrony is what characterises human-to-human communication but it is valid, at least to some extent, in computer-mediated human communication situations as well. IRC and multimedia conferencing are working examples of this.

5.7 The Nature of Communication

5.7.1 HHC vs. CMHC

The nature of communication in Figure 11 refers to the opposition HHC (human-to-human communication) vs. CMHC (computer-mediated human communication). In the model, the latter has been referred to as mediated communication as we would not like to emphasise the role of the computer too much. As Penny (1995b, 1) summarises it, "[e]lectronic technology mediates our relation to the world". Mediation can take place through various digitised means but our main interest lies in the pedagogy of computer- or telephony-based applications. In the final analysis, as Giddens (1991, 23) has asserted, "[v]irtually all human experience is mediated—through socialisation and in particular the acquisition of language".

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[10] Cf. Greek οικος (a house, abode, dwelling; any place to live in).

Our definition of CMC (computer-mediated communication) is in harmony with what Trentin & Benigno (1997) wrote about it, namely "computer-mediated communication embraces all those activities in which the computer is used for distance communication: access to and transfer of information, thematic conferencing via e-mail, audio- and video communication, etc." (Trentin & Benigno 1997, 32). Jones (1995b) goes much further by arguing that virtual space is socially constructed and re-constructed space:

> "CMC ... not only structures social relations, it is the space within which the relations occur and the tool that individuals use to enter that space. It is more than the context within which social relations occur (although it is that, too) for it is commented on and imaginatively constructed by symbolic processes initiated and maintained by individuals and groups." (Jones 1995b, 16)

CMHC is a new type of open forum for dialogic communication culture: dialogism presupposes that people that are communicating with each other respect one another's opinions. One factor that makes this kind of thing difficult or even impossible is all kinds of artifacts, viz. signs, objects and articles that draw communicators' attention to the person himself or herself, instead of the subject matter. Different kinds of things connected to race, gender, religion, etc. can be powerful impediments to dialogism as well.

As an example of CMHC that does away with various artifacts is e-mail, which lets people communicate across age, gender, geographical barriers, etc. Of course, on the other hand, not seeing some of the artifacts may also lead to writing something that would have been left unsaid in face-to-face communication.

What links these two categories—HHC and CMHC—together, is a number of common elements, out of which we only refer to two, viz. *transactionality* and *interactionality*. DeVito (1997) argues that communication is always a transaction and that this transactional character implies that each person can be seen as both speaker and listener, as simultaneously communicating and receiving messages. But transactional also means that communication is an ever-changing process, an ongoing activity, inevitable, irreversible and unrepeatable. (DeVito 1997, 28–29) In the spirit of Vygotsky, Bruner (1985, 25) goes even further and equals social transactions with the fundamental vehicles of education.

Interactionality refers to the interactional character of not only communication as such but also regarding the majority of the "new media" tools now available for the teaching profession. Interaction is a contemporary slogan, often misused we believe, but at its best it gives the user a lot of genuine options to choose from. In network-based learning (NBL), users—whether teachers, students or teacher educators—interact not only with different teaching packages and the interface designed by their producers but also, and increasingly, with other people logged on to the network (the Internet, the WWW, etc.), enhancing the human element in computer-mediated communication. Yet we should remember what McNeil said back in 1992 "... computer conferencing is a communications software tool—it is not an instructional software package" (McNeil 1992, 202). Even if he talked about one form of multimedia conferencing only, viz. computer conferencing, his statement holds true as far as many of the examples in our multidimensional model (Figure 11) are concerned: the primary focus is on communication; educational aspects only follow.

Special tools have been designed to facilitate teamwork on the networks. This kind of work is often called computer-supported collaborative work (CSCW). The tools for this kind of work are often called groupware (examples and evalution of some tools, cf. Hietala et al. 1997). Trentin & Benigno (1997) define groupware in this way: "*[G]roupware* ... to support the exchange and management of information within a working group. Depending on the use that is to be made of it, groupware is generally divided into one of two categories: systems for co-ordinating activities and systems for handling content (text, graphics, etc.)" (Trentin & Benigno 1997, 32).

In many people's minds, computer-mediated communication is quite different from human-to-human communication. However, for instance DeVito (1997, 131) argues firmly that "electronic communication—no matter how sophisticated—is still very similar to ordinary face-to-face interactions." The question, of course, then is what electronic communication means. DeVito (1997) mostly refers to e-mail and to some basic uses of the Internet, like browsing the WWW. On the other hand, latest developments in the field of technology and quite recent tools and applications are not necessarily more complicated or more difficult to use than previous ones. On the contrary, user-friendliness is increasing, helping users to overcome the technological barrier that they might expect to find between new and traditional media.

In HHC, addressivity (or reciprocity) is at its highest. However, also in CMHC, addressivity is present in varying degrees. One could argue that its role is equally important but its character or nature is different. In many distance education situations, in which videoconference systems or satellite links have been used, the participants have commented on an almost electrifying atmosphere despite the possibly long geographical distances between the different communicators. This is a sure sign that CMHC has an intrinsic quality of addressivity, "telepresence", which is different in quality when contrasted with face-to-face communication. Consequently, we can also argue that creating a dialogic contact with somebody else via electronic means in CMHC is not at all impossible. Dialogue can be created, established and maintained in CMHC with ease. Its nature, though, is qualitatively different and much more is dependent on the written word, as most telematic services so far are textually based. In multimedia conferencing, both in desktop videoconferencing and in ISDN-based videoconferencing, there is no reason why dialogue could not be created once the participants realise what is aimed at. Earlier (page 35) we discussed Tiffin & Rajasingham's (1995) idea of "just-in-time" teachers. In the light of "telepresence" and leaning on what was just said about addressivity, we could argue that dialogue can be established under such circumstances as well.

5.7.2 The Internet as a Community, a Collective or a Collectivity

Dialogue can be regarded as an inner framework surrounded by a container, a community or a collective. The terms "community" and "collective" mean almost the same and are often used interchangeably. A "community of learners" is used, among others, by Brown et al. (1993) and Jonassen (1995). "Collective" is used by Kitaigorodskaya and, perhaps, slightly surprisingly, by Isaacs (1996) in the MIT project. Both terms have different connotations, descriptive, normative, historical, ideological which we do not elaborate here. We see a collective as a more structured unit than a community. A collective can be argued to have more permanent and shared goals and aims, while a community might be born more informally. For instance, one could think about those virtual communities that are born between people who log on to different newsgroups. They usually have some targets in common, as a hobby they share and want to learn more or exchange ideas with others about. In collectives, more attention might be paid to the lack of a common cultural background. For instance, if the question is of multinational teamwork, in virtual communities some participants may look like outsiders and without any cultural or national background when analysed by the rest of the team members. Although we prefer using a "collective" when speaking about dialogue and dialogism, we admit that the general term, especially in the English-language literature about the Internet, privileges either "community" or sometimes "collectivity". Therefore, a few more comments on these issues are needed.

First, Balle (1991, 82) argues that in fact it is the community which precedes communication and not the reverse; even if communication may eventually reinforce the community. Second, Fernback's (1997, 38) fine analysis, inspired by Habermas' (1962/1989) idea of the *public sphere* as a realm in which rational public debate helps to shape participatory democracy, of CMC as a future type of public space:

> "[Habermas] noted that the nature and limits of public space were partially determined by the concomitant social configurations of the day. Thus, cyberspace may serve as a public sphere of sorts, comparable to the seventeenth-century coffee houses of Britain and salons of Paris or to the eighteenth-century press of England and the United States. IRC chat rooms, Usenet groups, listservs, and other subscriber-supported bulletin boards serve as institutionalized forums for public exchange and debate on an assortment of issues. Despite Habermas' idealized exposition of the public sphere and its overemphasis on the value of Enlightenment rationality, his notion of the public sphere remains a useful construct for examining the spatial nature of CMC technology." (Fernback 1997, 38)

Knapp (1997, 181) admits that Habermas' idea of public sphere has been met with significant reservations, but that the concept itself persists in a wide range of discourses on cultural theory. The metaphor of coffeehouses has also been discussed by Connery (1997), who points out the similarities between 17th-century British culture and today's Internet communities. In his opinion, the coffeehouse was the real space where controversies between Cavaliers and Roundheads, Tories and Whigs were debated in real time (Connery 1997, 163). Perhaps Tabbi's (1997, 233) pun on Public's Fear vs. Public Sphere is more than simply something historically related to 17th-century coffeehouses!

Another researcher that has studied the community-based ideas in relation to the Internet is Jones (1995a; 1997b). His analysis of the dual potentialities of the Internet are based on the fact that

> "the Internet could recreate community *as we had once known it*, rebuild for us the 'great good place' (Oldenberg 1991; Rheingold 1993) we once knew but abandoned ... Second, it would not merely 'get us all together', it would do so without our having to expend much effort, since it would overcome space and time for us, and it would also enable us to communicate with one another." (Jones 1997a, 7)

Jones (1997a) also sees the Internet as *an imagined community* in two ways inimical to human communities. First, Internet communities "thrive on the 'meanwhile', as they are forged from the sense that they exist, but we rarely directly apprehend them, and we see them only out of the corner of our eye. ... In many instances they can be of great significance to people. ... Second, they are imagined as parallel, rather than serial, groupings of people, which is to say that they are not composed of people who are necessarily connected, even by interest, but are rather groupings of people headed in the same direction, for a time." (Jones 1997a, 17) Bennahum's (1994, 23; cited in Jones 1997a, 17) definition of an Internet community is even more revealing: "[being online] is a time to be alone and yet be with others". Huhtamo (1995, 177) refers to Ascott's (1993) *telenoia*, which means "networked consciousness, interactive awareness, thought at a distance, 'mind-at-large'". Bauman (1995, 44–49) launches a concept of *togetherness* and gives a few examples, such as mobile, stationary, tempered, manifest and postulated togetherness. He even talks about meta-togetherness. Perhaps in the Internet community (or communities, rather) we should see an emerging example of, say, *virtual togetherness*.

Fernback (1997, 42) reminds us of Dewey's words, according to which the individual's full potential cannot be realised without the context of the community to guide it, and on these grounds criticises virtual communities of missing the sense of individuality that could operate within the collectivity. Fernback (1997, 39) notes that the term "community" encompasses both material and symbolic dimensions and prefers to use a "collectivity" instead. The collectivity of CMC users is driven, according to Fernback (1997, 46), by the principles of democracy and egalitarianism in cyberspace.

Watson (1997, 103) has consulted general-purpose dictionaries about the term "community" and is puzzled by some of his findings. The *Random House Dictionary of the English Language*, for instance, does not link "community" to "communication", which, after all, is its most closely related word. As an Internet scholar, he sees that both stem from the Latin root *communis* (common) and should therefore be linked together.

In fact, the analysis of the etymology of the word *community* can go even further back in Latin. The stem word *communis* can be divided into *cum* (together; with) and *munis* (obligation, duty). Community, if interpreted like this, then stands for common obligation. This is what Neil Postman (in 1993; cited in Watson 1997, 122) appeals to, when he cautions against the use of the term "virtual communities". To his mind, virtual communities do not include the essential feature of a common obligation. Watson (1997, 123) disagrees with Postman by saying that conditions change as humans adapt to new and emerging environments, and words and their meanings must change as well.

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To sum up, if we look at the multidimensional model of directed and mediated communication (Figure 11, page 70), our main observation is that most of the latest developments in technology tend to get clustered around multidirectional, asynchronous, polyphonic and secondary or tertiary level addressivity. In this context, a reference should be made to Poster's (1995, 3, 18) idea of some of the technologies and media becoming *a second age of mass media* or *the second media age,* characterised by features we have been analysing above. Another comment could be linked back to Habermas' *emancipatory potential* of the media through bringing information to a large audience (cited in Poster 1995, 13), which obviously is the case when we analyse the latest telematic tools and software, for instance. Castells (1996, 341) draws a very vivid conclusion about the latest developments and argues that "we are not living in a global village, but in customized cottages globally produced and locally distributed".

If we contrast our original classification (Figure 4, page 17) and its terminology (monologic, dialogic, telelogic communication) with the present multidimensional model, and with what has been said about dialogue, we could conclude that

Ball-Rokeach & Reardon's (1988) monologic communication is parallel to our unidirectional secondary or tertiary level addressivity. Their dialogic communication corresponds to our bidirectional, relatively monophonic but direct communication. And their telelogic communication covers most of what we have been analysing as multidirectional, tertiary level mediated addressivity either synchronously or asynchronously.

But dialogue and dialogic communication in the sense we have interpreted them through the ideas of Bakhtin, Vygotsky, and Bibler as well as through Kramsch, Isaacs and Kitaigorodskaya, cover most of our categorisations, particularly from secondary level addressivity downwards. In fact, we contend that real dialogue in the sense we have been analysing earlier in this report, starts from monophony, advances via stereophony and comes to fruition in the area of bi- and multidirectional mediated communication. What is different to, say, Vygotsky's Zone of Proximal Development as far as the teacher–learner interaction is concerned, is that through telecommunications the teacher's role changes; there can be a legion of teachers per one single learner. Teachers can come from various parts of the world. They can be (tele)present on-line, e.g., via multimedia conferencing, or off-line, e.g., via e-mail or mail lists or newsgroups. The learner's role changes as well as it becomes easier and handier for a learner to start feeling to belong to a network-based community or collective of other learners, with shared goals and aims and, perhaps, with similar problems to be solved.

6. TOWARDS DIALOGIC AND VIRTUAL LEARNING ENVIRONMENTS

In this chapter, a number of issues will be raised, in relation to new emerging dialogic and virtual learning environments.

Ashman & Conway (1997) remind us of a basic definition of a learning environment:

> "Every setting in which learning takes place involves a learner, a teacher, a setting, and information to be learned. … Learning, therefore, occurs in an ecosystem [Doyle & Ponder 1975] in which there is a series of inputs, a series of teaching and learning processes, and a series of outputs." (Ashman & Conway 1997, 2)

Pantzar (1995, 86) deplores the lack of a universal definition of a learning environment, especially now that there is an increased need for one because of the development of information technology and its introduction to education. Pantzar's own definition goes like this:

> "A learning environment consists of the physical, mental, and learning material framework and prerequisites for goal-oriented learning. These can be provided by the organiser of the education or selected by the learner him/herself" (Pantzar 1995, 86).

Even if Pantzar's definition focuses on relevant issues, our own definition is slightly different (we will come back to it later in this chapter).

Tella (1998) has argued that in Finnish it might be appropriate to distinguish between *opiskeluympäristö* (literally: a studying environment) and *oppimisympäristö* (a learning environment) because the connotation of the English verb *to learn* is slightly different. *Learning* in English also refers to studying (cf. 'learn = gain knowledge of or skill in, *by study* [emphasis added], practice or being taught' (Advanced Learner's Dictionary of Current English), while in Finnish learning mostly refers to the product of studying. To us Pantzar's (1995) definition of a learning environment is partly focused on the "studying" environment, i.e., to external settings in which students study. Pantzar (1995, 87), however, also refers to Steele & Hedberg (1994), by underlining that learning does not take place by itself in any kind of learning environment; rather, the aim should be at a framework in which the student's own activity together with human and other interaction produce processes and results that can be regarded as learning. Pantzar (1995, 88–90) also gives an interesting overview on the problem of the lack of theories on modern flexible, open and technology-oriented learning environments, calling for an interdisciplinary approach.

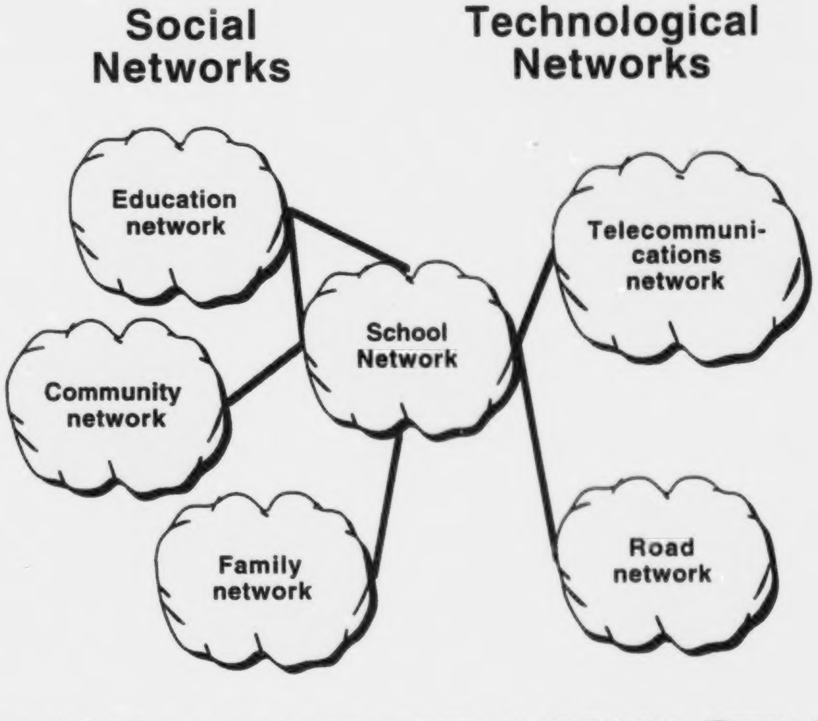
Social Networks
Technological Networks
Education network
Telecommunications network
School Network
Community network
Family network
Road network

FIGURE 13. THE INTERCONNECTIBILITY OF NETWORKS (TIFFIN & RAJASINGHAM 1995, 29).

Tiffin & Rajasingham (1995) argue that social networks link with each other and the school via the technological network. "People can walk to talk [to each other] or use the telephone" (Tiffin & Rajasingham 1995, 29). In our opinion, using the phone—or email—does not replace "walking to talk" to one's colleagues, for instance; rather, it adds one more channel of communication to us and gives us the possibility to choose from different channels depending on the type of business we have with each other.

One of the important issues really is the interconnectibility of networks. It is quite common to think of a communications network in the same way as we think of a road network, for instance. Communication and transportation, "the infrastructures of society" (Kumar 1995, 11), can easily be associated.

Dialogue needs a setting to take place. The constructivist movement has adopted the metaphor of an environment for instruction. This metaphor puts emphasis on the place or space just as that of a classroom, while reflecting at the same time on the values of the constructivist movement (Wilson 1995, 26–27). We can refer to a "collective" or to a "community" (cf. our previous discussion of these terms on page 94). We prefer the collective, as it corresponds to the original use of the Kitaigorodskaya School and was also used by Isaacs (1996) in the MIT Dialogue Project. More recently, we have come to think of dialogue as the creation of tangible, self-organising, charged "fields" of new meaning in which profound collective insight and reorientation appear, and out of which people can take aligned and effective action. This view corresponds largely to Kramsch's idea of emerging third cultures in the dialogic experiences (cf. Chapter 3.5.1).

Elsewhere, a lot of references have been made to the Virtual School concept. The main idea of a virtual school is that students are not physically in contact with other students but rather that they communicate with each other and with their teachers via telecommunications (Tella 1995). Put in a very simplified way, this may lead to a transfer towards abstractedness, through an interspace that could be called a virtual space. We think that this virtual interspace is a step towards theory, towards the abstractedness of concrete experiences.

Abstract in this context, as often in others as well, is used to refer to something more systemic and less fragmentary than everyday thinking is. Modern information and communication tools are likely to help or facilitate the development of students' thinking from everyday routine-like thinking towards scientific thinking, which is characterised as abstract. This is directly linked to the ongoing process of information becoming more abstract and going further and further away from concrete or shared experiences.

A virtual learning environment helps, facilitates and contributes to the emergence of a dialogic learning environment as it forces the learner to pay more attention to communication. However, we argue that a teacher is needed to create and generate this dialogue, to give a model so that the learning environment can be created and established more quickly than without the teacher's help. Without the teacher, it would take more time to create a learning environment or, in the worst of cases, there would simply be no beneficial or fruitful learning environment at all.

A virtual learning environment is not necessarily more efficient (nor less efficient, for that matter) when compared to a traditional classroom-focused learning environment, if there is no dialogue. Dialogue is especially beneficial when the learning environment can be described as open, multimedia-based, networked and collaborative.

As the concept of dialogism is exceedingly relevant in our research project, we consider technology a means of communication, a modern type of mediation between human beings capable of using modern technology, dialogism will serve as the key element between the teachers and students.

Our main argument is that *dialogue is a crucial element in the creation of any learning organisation and especially in establishing an open multimedia based collaborative and networked learning environment*. It suggests that the learning environment in the framework of dialogism cannot be a physical space, a classroom, nor any particular media education tool. *The learning environment is—dialogue.*

7. NETWORKS IN AN ARTIFACTUAL, MEDIATED WORLD

"The artifact is to cultural evolution what the gene is to biological evolution—the vehicle of information across generations. "(Wartofsky 1979; cited in Pea 1993, 79)

Artifactual communication refers to the influence of artifacts (or artefacts) on communication. "Artifactual messages are those made by human hands. Thus, color, clothing, jewelry and the decoration of space would be considered artifactual." (DeVito 1997, 182) The concept of "artifact" is the main construct in this chapter, together with the concepts of "mediation", "mediational tools" and "mediated action".

The chapter is about how the present network-based communication can be seen conceptually in relation to some of the concepts we have already introduced. The idea is therefore to conceptualise some of the technological developments in a framework that can explain their functionalities when contrasted with dialogic principles.

7.1 A Hierarchy of Artifacts

One definition of artifacts is given by Cole (1995, 190): "[Artifacts are] aspects of the material world that are taken up into human action as modes of co-ordinating with the physical and social environment." One model to conceptualise modern tools and learning environments is based on a three-level hierarchy of artifacts by Wartofsky (1979; cited in Cole 1995, 194–195). In this context, this hierarchy will be presented in an extended form as presented by Cole (1995), and other comments will be added to it (Table 3 on page 106). Cole's (1995) argument departs from the fact that

> "in the classical statements of cultural-historical psychology ..., culture is represented only in a restricted, abstracted form

> designed to highlight the crucial property of mediation through artifacts. Artifacts do not, of course, exist in isolation. Rather, they are interwoven with each other and the social lives of the human beings they mediate in a seemingly infinite variety of ways. Considered in the aggregate, they constitute the unique medium of human life, the medium we know as culture." (Cole 1995, 194)

In Wartofsky's (179) hierarchy of artifacts, the first level consists of *primary artifacts*, which very much correspond to the image we ordinarily have about tools, like axes, clubs, needles and bowls. Cole (1995, 194–195), however, also adds computers, telecommunications networks and mythical personages to this level.

Secondary artifacts consist of representations both of primary artifacts and of modes of action using primary artifacts. D'Andrade (1984, 93; cited in Cole 1995, 195) includes in this category *cultural models*, which "portray not only the world of physical objects, but also more abstract worlds such as social interaction, discourse, and even word meaning". This is very close to the importance Vygotsky put on making meaning as well (cf. page 23). In Cole's (1995, 195) interpretation, secondary level artifacts play a central role in preserving and transmitting modes of action.

Tertiary artifacts represent a class of artifacts that "can come to constitute a relatively autonomous 'world,' in which the rules, conventions and outcomes no longer appear directly practical, or which, indeed, seem to constitute an arena of non-practical, or 'free' play or game activity" (Wartofsky 1979, 208; cited in Cole 1995, 195).

Cole's (1995, 195) interpretation of these third level artifacts includes all imaginative worlds that human beings create to make their actions more versatile. These artifacts can provide a tool for changing current praxis. When one interacts with imaginative worlds created through tertiary artifacts, his modes of behaviour may get transferred beyond the immediate contexts of their use, to new alternative or possible worlds. Wartofsky applies this hierarchical conception of artifacts to works of art and processes of perception. Cole (1995, 195) generalises this conception for use in designing activities for children that will promote their social and cognitive development. Here again, we have a link to Vygotsky's Zone of Proximal Development (Chapter 3.4.1 on page 21), which also concentrates on the learner's cognitive development. Cole (1995, 197) remarks that transforming tertiary artifacts into a material system of activity, one needs to provide participants with primary and secondary artifacts as crucial mediational means.

TABLE 3. A THREE-LEVEL HIERARCHY OF ARTIFACTS (BASED ON WARTOFSKY 1979 BUT EXTENDED BY COLE 1995 AND BY OURSELVES).

Level of Artifacts	Examples of Artifacts
Primary Artifacts	Tools directly used in production (axes, clubs, needles, bowls) (Wartofsky); Computers, telecommunications networks, mythical cultural personages (Cole)
Secondary Artifacts	Representations both of primary artifacts and of modes of action using primary artifacts; cultural models (social interaction, discourse, word meaning)
Tertiary Artifacts	Constituting a relatively autonomous "world", an arena of non-practical, "free" play, game activity; (our additions) MUD, MOO, MUSE, MUA, Internet2

It is important to notice that technical and technological progress has supported the development of tertiary artifacts in an unprecedented manner. At the same time, the transfer towards a new paradigm of network-based learning (NBL) is made possible.

Wartofsky's hierarchy (1979) and Cole's additions to it (1995) arouse a few comments. First, we would like to concur entirely with Cole's interpretation on communications networks being primary artifacts, once their use in an information society is taken for granted, as is the use of knives, scissors or computers right now. At the moment, this is not yet necessarily the case. At present, when references are being made to the Internet, most people think of the so-called Internet1, i.e., the Internet as we know it now. What is visionary in Cole's (1995) idea of including communications networks among primary artifacts is that most people probably still think of these networks as an abstraction of highly technical development, something out of this world, something an ordinary person cannot master. Cole regards these networks as concrete and pragmatical tools, which they are in fact but not to all yet. The progress we have been witnessing in the area of technology also mirrors transfers from problems connected to the physical "technical" network to the emphasis on the social network, and with this progress, towards the analysis of various modes of communication and patterns and contents of human-to-human communication, even when transmitted in a mediated way through communications networks. It is, however, good to remember that the Internet—or more generally speaking—the different networks now accessible, might become the next generation of mass media. Poster (1995, 3), for instance, already speaks of *a second age of mass media,* when referring to the latest technological developments. Pavlik (1996, 54) quotes writer Michael Crichton's words (uttered in 1993 at the National Press Club in Washington) "In my own mind, it's likely that what we now think of as the mass media will be gone in ten years—vanished without a trace." Pavlik himself (1996, 54) uses an even more colourful comparison when arguing that the old media will go the way of the dinosaurs!

Tertiary level artifacts are also worth thinking about. At present, the Internet1 is being replaced in exclusive places in the States in particular by the Internet2, which profits from much faster connections than the Internet1. At this moment, we could perhaps imagine the Internet2 as an example of the third level of Wartofsky's (1979) hierarchy, though it will, perhaps in a couple of years' time or probably sooner, change into a primary level artifact. Cole (1995, 210) mentions one criterion which could fulfil the task of a tertiary artifact: "providing its users with tools for dealing more effectively with their everyday lives because of the time they spend living imaginatively in it".

One way to approach the Internet from an artifactual communication point of view is to *consider it as a narrative*. In fact, Jones (1997b, 15) claims that the Internet is less a futuristic "cyberspace" than a discontinuous narrative space. On entering it, one forsakes both body and place and becomes a thing of words alone. Now, narratives can be artifacts of an Internet community. This interpretation is well motivated as the Internet so far has been mostly text-based or textual, even if the World Wide Web has added to it a multimedia-rich interface, making it possible to use both sound and picture. Mitra (1997, 59) analyses the link between the Internet and narratives and sees the textual nature of the Internet communities as its first distinctiveness: "The texts exchanged on the Internet are the artifacts which hold the Internet communities together as well as indicators of the direction in which the community is headed. Identities within the community are produced primarily by the way in which the participants insert themselves into the discourse." Mitra (1997) goes on to create a link between virtual texts as seen on the Internet, the dialogic process and the thinking of Bakhtin:

> "The image produced by the texts exchanged in the electronic community is thus unstable and predicated upon prior knowledge. Since messages are categorized by theme, the arguments proposed in the messages become relatively incomplete unless the user is able to draw upon the memory of earlier texts that shape any particular topical discussion. This is a fundamental characteristic of any dialogic process, where only in the exchange of texts does an argument or an

> image evolve. This can be constructed in terms of Bakhtin's (1981) ... argument that the dialogic nature of text can either be open or closed. In the context of the Internet, dialogue is generative and continuous as the textual utterances on the Internet necessarily anticipate other utterances, and it is in the exchange that specific images and positions appear." (Mitra 1997, 60)

Mitra's (1997) approach justly underscores the textuality of the Internet. As he himself states, the texts on the Internet are produced by the users—the "user-audience" (term used by Mitra 1997, 60). They represent their ideologies and worldviews, which calls for a theoretical foundation to see that writing process as a process of language, and also that language should be non-singular and non-monolithic. Therefore, Mitra (1997, 74) sees it as only natural to have recourse to Bakhtin's ideas (1981), for instance.

Baym (1995) has studied Internet newsgroups and found there intra-group expressions through emoticons (cf. also Pavlik 1996, 15), abbreviations and inside jokes. Mitra (1997, 106) sees this development as parallel to Bakhtin's argument that "as groups develop over time they generate group-specific meanings ... [eventually evolving] new forms of speech, or genres, unique to that community" (cited in Baym 1995, 151).

Another possibility—and equally challenging—is to focus on the imagined and imaginative possible worlds, which brings us closer to the ideas of a virtual school and virtuality (cf. e.g., Jones 1995a; Quéau 1993; Jones 1997b; Kroker & Kroker 1997). In Finland, Kynäslahti (1997, 49), for instance, has been reflecting upon the concept of virtuality in educational contexts and the relationships between virtuality, immersion and possible worlds.

Imaginative or imagined worlds are well represented in computer-based MUDs (multi-user domains; originally multi-user dungeons), MOOs (MUDs object oriented), MUAs (multi-user adventures) and MUSEs (multi-user simulations environments), for instance. They are magical worlds, where roamers can adopt flexible anonymous roles and experience exciting and even dangerous situations (cf. e.g., Dede 1995, 48; Penny 1995a; Ito 1997; Porter 1997a, xii). "Most [MUDs] are fantasy, participatory, and educational in nature, and to many, represent many of the best qualities the online environment has to offer" (Pavlik 1996, 171). Tella (1997a, 18–23) has pointed out that the main objective in worlds like MUDs is to combine experiential learning and the use of computer games in virtual worlds that represent tertiary level artifacts very well indeed. Roleplays, of course, have been played for ages, and without computers or networks, but the developments in technology have given these human activities more dimensions. Pavlik (1996, 170), however, also points out the addictive character of some of the MUDs available and reports how certain colleges have banned MUDS from their computer systems, and how Australia has banned them from the entire continent! Other adjectives often associated with MUDs are immersive (e.g., Huhtamo 1995; Ito 1997, 88), fluid, simultaneous and even spiritual (Dyson 1995, 31). It may not even be far-fetched to state that Csikszentmihalyi's (1988, 8) *flow* or *autotelic experience*, i.e., an experience that is rewarding in and of itself, could be applied to the immersive influence of some of these multi-user domains.

Imagined worlds also include a different surrealistic hyperfiction that is becoming more and more popular. One example of this kind of software is MYST, in which players enter a dreamlike landscape full of sights, sounds and mystical objects that guide the players through a compelling adventure without any clear rules, goals or outcome other than exploration and experience (Pavlik 1996, 199).

Tertiary level artifacts seem far away from concrete activities one can do in classrooms in which communications networks are being used. However, at present they seem to count among those representations that are developing and which might one day be everyday tools for most of us. We have already referred to Jones' idea of CMC becoming a new public forum for the exchange of ideas (cf. page 94). Working on the net might replace or complement some traditional community dimensions, like the communal group. In those possible worlds enabled through tertiary artifacts, *habitat*, man's living place, is partly in that interaction that is created by the users for themselves and for other users. The Internet, admittedly, provides some resemblance to a place for "being", and lurking on mailing lists, Usenet newsgroups, Internet Relay Chat, etc. (Jones 1997b, 13). The fundamental question might be connected to a new kind of *enculturation* that is being born on the basis of the concept of networks.

In educational and instructional perspectives, it is challenging to observe and analyse secondary and tertiary artifacts. It appears to be relevant that different modes of action should be combined with primary level artifacts. Equally important seems to be to profoundly comprehend the relations between interaction, dialogism and mediated action. These relations might be the springboard for a new culture of communication. It could be argued that when artifacts are shared with the learners at an appropriate moment of the teaching–learning process, it will help the learner gain new knowledge and to reach a higher level of expertise. Learning environments should be able to combine the use of the principles of dialogism, to stimulate the learners' zones of proximal development, and to give them a chance to work with lots of different artifacts loaded culturally, socially and technologically. Therefore, we believe that it is crucial to think how and by what means different teaching and learning practices as well as learning strategies should be developed in network-based learning. Thus, our initial motto "The context for human development is always a culture, never an isolated technology" could come true.

7.2 Mediation, Mediational Means and Mediated Action

One of the theoretical constructs we have been using in this publication is *mediation*. We talked about it in connection with our multidimensional model of direct and mediated communication (Figure 11 on page 70) and we used it when speaking about artifacts. In this chapter, we will go deeper into this concept.

Mediation means a relation between two things or two people ("la médiation est ce qui permet de créer une relation entre deux choses"; Quéau 1993, 21). Mediation is also one of Vygotsky's basic constructs when conceptualising human psychology. It was the language of all forms of mediation that preoccupied Vygotsky most. Yet he had an even larger set of mediational means in mind, consisting of various systems for counting; mnemonic techniques; works of art; writing, etc. (Cole & Wertsch s.a.). In addition to tools proper or corporeal things extending out into the material world (Wartofsky's primary artifacts, Table 3), humans in their history have also invented cultural tools, both material and psychological, that constitute a "cognitive technology" which has enabled us to restructure human abilities and reconfigure human nature. At this point of human history we are starting to explore a new "technology", one which unites the material with the psychological, an "informational technology" that in the emerging community of the World Wide Web is providing a new means of mediating our activities. (Vygotsky Centennial Project s.a.) Wertsch, Del Río & Alvarez (1995) write that in addition to mediation, *mediational means* and *mediated action* have emerged as essential building blocks in the formulation of sociocultural research. They argue that "humans have access to the world *only indirectly, or mediately* [emphasis added], rather than directly, or immediately. This applies both with regard to how humans obtain information about the world and how they act on it—two processes that are usually viewed as being fundamentally intertwined." (Wertsch, Del Río & Alvarez 1995, 21) It is also worth remarking in the spirit of Smagorinsky (1995) that "the mind is unlimited in the sense that its development is inseparable from the tools of mediation" (Smagorinsky 1995, 197).

"Mediational means" and "cultural tools" can be used interchangeably if we accept Wertsch, Del Río & Alvarez's (1995,

21) argument. As stated earlier with regard to Wartofsky's (1979) hierarchy of artifacts, we can also say that these cultural tools are artifacts *par excellence*. Wertsch, Del Río & Alvarez (1995) also contend that cultural tools "provide the link or bridge between the concrete actions carried out by individuals and groups, on the one hand, and cultural, institutional, and historical settings, on the other. … in addition to mediating the human action …, the analysis of these cultural tools occupies a kind of mediating position in the sociocultural theoretical framework itself" (Wertsch, Del Río & Alvarez 1995, 21).

TABLE 4. MEDIATION (WERTSCH, DEL RÍO & ALVAREZ 1995, 22–26).

Qualities of Mediation	
1	It is always an active process.
2	The introduction of a new cultural tool into this active process inevitably transforms it.
3	It always involves constraint as well as empowerment.
4	Cultural tools usually emerge for reasons other than to facilitate many of the kinds of action they in fact end up shaping.
5	Action and the mediational means that it employs exist in the real world in complex cultural, institutional and historical settings, and these settings inevitably shape the cultural tools that are invoked in carrying out action.

Mediation can be seen to have several central qualities; first, it is an active process, and second, the introduction of a new cultural tool into this active process inevitably transforms it (Wertsch, Del Río & Alvarez 1995, 23) (Cf. Table 4). In Vygotsky's words:

> "The inclusion of a tool in the process of behavior (a) introduces several new functions connected with the use of the given tool and with its control; (b) abolishes and makes unnecessary several natural processes, whose work is accomplished by the tool; and alters the course and individual features (the intensity, duration, sequence, etc.) of all the mental processes that enter into the composition of the instrumental act, replacing some functions with others (i.e., it re-creates and re-

> organizes the whole structure of behavior just as a technical tool re-creates the whole structure of labor operations)." (Vygotsky 1981, 139–140; cited in Cole & Wertsch s.a)

As a third quality, mediation always involves constraint (some form of limitation) as well as empowerment (opening up new avenues of action). Even if the introduction of a new cultural tool frees us from some earlier limitation of perspective, it is bound to introduce new limitations of its own. (Wertsch, Del Río & Alvarez 1995, 24–25) This is certainly true with regard to the Internet and most of the media and tools we have been discussing in this publication. On the other hand, this must be admitted to be part of the price of "progress". However, some of these limitations are clearly due to the barrier that separates the ordinary users of technology from those who design it, i.e., the question is often of the human–machine interface that is not user-friendly enough.

As a fourth point of the qualities of mediation, Wertsch, Del Río & Alvarez (1995, 25) refer to the fact that "cultural tools usually emerge for reasons other than to facilitate many of the kinds of action they in fact end up shaping". We have added a fifth quality of mediation to Table 4 even if Wertsch, Del Río & Alvarez (1995) do not explicitly speak about it as a quality. It reads like this: "Action and the mediational means that it employs exist in the real world in complex cultural, institutional, and historical settings, and these settings inevitably shape the cultural tools that are invoked in carrying out action" (Wertsch, Del Río & Alvarez 1995, 26).

Cole & Wertsch's (s.a.) interpretation of such a view is that artifacts fundamentally shape and transform mental processes and not only serve to facilitate them. A second implication of Vygotsky's general position towards mediation is that the artifacts which enter human psychological functions are culturally, historically and institutionally situated. This also means that there is no tool adequate for all tasks, and there is no universally appropriate form of cultural mediation. Even language is no exception to this rule. (Cole & Wertsch s.a.)

Cole & Wertsch (s.a.) analyse how Russian cultural-historical psychologists "coupled a focus on the cultural medium with the assumption that the special mental quality of human beings is their need and ability to mediate their actions through artifacts and to arrange for the rediscovery and appropriation of these forms of mediation by subsequent generations". They go on like this:

> "Higher mental functions are, by definition, culturally mediated; they involve not a 'direct' action on the world, but an indirect action, one that takes a bit of material matter used previously and incorporates it as an aspect of action. In so far as that matter has itself been shaped by prior human practice (e.g., it is an artifact), current action benefits from the mental work that produced the particular form of that matter." (Cole & Wertsch s.a.)

One implication of the central position of cultural mediation to mind and mental development would be that taking "action in context" as the unit of psychological analysis would require a relational interpretation of mind; objects and contexts are tied together as part of a single bio-social-cultural process of development. Another implication, Cole & Wertsch (s.a.) argue, would say that mind is no longer entirely inside the head; higher psychological functions are transactions that include the biological individual, the cultural mediational artifacts, and the culturally structured social and natural environments of which persons are a part.

We now touch on *human action* and on *mediated action*. Wertsch (1995) defines human action in the following way:

> "... I propose that mental functioning and sociocultural setting be understood as dialectically interacting moments, or aspects of a more inclusive unit of analysis—*human action*. As understood here, action is not carried out either by the individual or by society, although there are individual and societal moments to any action. For related reasons an account of action cannot be derived from the study of mental functioning or sociocultural setting in isolation. Instead, action provides a context within which the individual and society

> (as well as mental functioning and sociocultural context) are understood as interrelated moments." (Wertsch 1995, 60)

Vygotsky (1978; 1987) emphasised speech, thinking and, more generally, "mediated action". Fundamental to his understanding of the role of "psychological tools" (or "mediational means") was the assumption that "by being included in the process of behavior, the psychological tool alters the entire flow and structure of mental functions. It does this by determining the structure of a new instrumental act" (Vygotsky 1981, 137).

What Vygotsky (1981) referred to was that launching a psychological tool (e.g., language) into the process of action will cause this action to change. The question then is not only of facilitation but of qualitative transformation. This leads to a short definition of mediated action as formulated by Wertsch (1995, 64): *mediated action* refers to action interpreted as involving an irreducible tension between mediational means and the individuals employing these means. Bauman (1993, 126) is naturally right when arguing that in fact "each action is both *mediated* and 'merely' *mediating*", as we might not be able to see the outcomes brought about by our mediated action.

Cole (1995, 191) emphasises the inextricable link between the tool/auxiliary means and the task and cites Vygotsky (1929) on the subject:

> "All processes forming part of that method form a complicated functional and structural unity. This unity is effected, first, by the task which must be solved by the given method, and secondly, by the means by which the method can be followed. ... It is precisely the structure which combines all separate processes, which are component parts of the cultural habit of behavior, which transforms this habit into a psychological function, and which fulfills its task with respect to behavior as a whole." (Vygotsky 1929, 420–421; cited in Cole 1995, 191)

How inextricably intertwined the means and the action are is well demonstrated in Wertsch's (1995) pole vaulting metaphor:

> "It is clearly futile, if not ridiculous, to try to understand the action of pole vaulting in terms of the mediational means (i.e., the pole) or the individual in isolation. On the one hand, the pole by itself does not magically propel vaulters over a cross bar; it must be used skillfully by the vaulter. On the other hand, a vaulter without a pole or with an inappropriate pole is incapable of participating in the event, or at best can participate at less than an optimal level of performance." (Wertsch 1995, 65–66)

Another example of mediated action presented by Wertsch (1995, 68) is concerned with American political discourse or speaking in "sound bites". Research has shown that politicians and newscasters speak more shortly than before in order to make sure that their replies will get on the air. Hallin's analysis (1992) shows a steady and striking decrease in the average length of a sound bite from 60 seconds in 1968 to less than 9 seconds in 1988 (cited in Wertsch 1995, 68; cf. also Castells 1997, 321). – A similar example could be given from the influence that e-mail has had on the length of messages. Many netiquettes even recommend that e-mail messages should not be longer than one screenful if possible, so the message is clear: write shorter messages! The usual spontaneous action of writing is being forced to one or at the most two screenfuls, irrespective of whether the writer has more to say. Another development has taken place quite recently, with regard to people's home pages on the WWW. Now it is fashionable to have everything on the same screen, so that users would not have to roll your pages up and down. This tendency certainly has its advantages and will probably make reading easier and more digestible but it shows quite well how the means influence action.

Wertsch (1995, 70) remarks that in the case of newscasters, the mediational means included are not as evident and concrete as in the pole vaulting example but no less essential. In the case of TV news, the mediational means take the form of a pattern of speaking, often difficult to conceptualise independently of the people employing it. However, it is a pattern that Bakhtin (1986) termed a "speech genre". (Wertsch 1995, 70) — In our example of e-mail messages getting shorter, the question similarly is of a new genre created by electronic communication. Chatting via IRC is an even more conspicuous example of how writing patterns can change.

On the basis of his research, Wertsch (1995) draws a superb parallel between mediated action and the enormous potential hidden in modern information and communication technologies:

> "For my purposes, the major point of interest here is that mediated action can undergo a fundamental transformation with the introduction of new mediational means" (Wertsch 1995, 67).

This is a good point on which we will build our own summary …

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As we think of computers, CMC and CMHC as well as the Internet on the whole, as cultural tools, it becomes easier to understand that this transformation process begins as soon as one starts the hands-on approach. In fact, a better term has been coined, viz. the *minds-on approach*, implying that not only hands are involved in the process of work but the whole mind.

8. CONCLUSION: SYNERGY BETWEEN DIALOGISM, TECHNOLOGY AND THE TEACHING–LEARNING PROCESS

Each period of time devotes a great amount of its intrinsic energy to finding its own principles, fundamentally in order to be able to define itself and to find the *raison d'être* of its own existence. These principles are called—sometimes misleadingly—tendencies or trends, sometimes philosophies or modes of life. In our way of thinking, some of these tendencies at present include the major features we have discussed in this publication: dialogism, dialogic communication, mediation and technology. During this research process we have started to see ample opportunity and synergy between these high-flying but ongoing tendencies. In turn, we have made a conscious effort to relate some of their salient features to media education as well as to the teaching–learning interaction, and, in the final analysis, to our conception of culture and communication. In this chapter, we try to summarise some of the findings that we see as crucial.

As stated earlier in this publication, we believe that one of the most important observations has been made by Mowlana (1997, 243) when he wanted to *create more interaction, promote more human dialogue, and establish a constant exchange of ideas,* at the expense of manipulative, technology-oriented communication. In our opinion, *dialogue is one of the cornerstones* when constructing a more humane communication culture.

In this publication, we have argued in favour of dialogue on several occasions. One of the firmest defenders is Isaacs (1996, 21) who contends that dialogue might help us create new infrastructures for learning within modern organisations. To him, dialogue, among other things, emerges as a cornerstone for organisational learning. In addition, dialogue may be an innovative alternative approach to producing co-ordinated action among collectives.

We underline, once again, that dialogue in the sense we think of it does not stand for a debate or a dialectic dual to beat down one's opponent. Rather, as implied in Figure 4 (on page 17), dialogue refers to the building of a community.

On the whole, we have used the notion of dialogue to imply three major focuses. Our starting point, based on Bakhtinian and Biblerian thinking, is that *dialogue is the basis of all human communication and interaction, also embracing cultural issues.* Second, we see *dialogue as the key concept in the pedagogic process.* Our interest in promoting dialogic communication culture in media education as well as in teacher education is based on this premise, originally arousing from Vygotskian thinking. Third, and based on Biblerian ideas, we have referred to dialogue as *a general definition of indivisible origins of thinking.* These three starting points are all grounded on the notion of shared talk and negotiated meanings between humans. In our understanding, dialogue is something much more profound than talking to another person; it contains mutual respect and politeness towards other human beings. We agree with Huttunen (1995, 5), who contends that using dialogue in teaching should not be understood as a pedagogical trick or any cheap gimmick; rather, dialogue always embraces much more profound dimensions of human-to-human communication as well as a number of salient features embedded in mediated communication, as suggested in this publication.

Our basic argument has been that dialogism, i.e. the pedagogically sound and meaningful use of dialogue, should be understood to be an integral part of most computer-mediated human communication, as it already is regarding all human-to-human communication. If the significance of dialogism is fully comprehended and properly taken into account, it will modify our present relationship to most technological tools. We have attempted to illustrate how dialogue is created, established and maintained in CMHC. We have also acknowledged that the nature of dialogue in

CMHC is qualitatively different from human-to-human communication, as it has been dependent on the written word so far. Multimedia conferencing, among other things, however, have transferred CMHC closer to HHC.

We have firmly argued that *dialogue can be a fundamental element when creating an open multimedia based, collaborative and networked learning environment as well as in any learning organisation*. However, we have also concluded that the learning environment in the context of dialogism cannot be a physical space, like a classroom; rather, *dialogue itself creates a most empowering learning environment* which, without any difficulty, can include different kinds of technological tools as well. This observation is deeply rooted in the ideas of Bakhtin, Bibler and Vygotsky, presented earlier in this publication. This kind of thinking is also in line with Huttunen's (1995, 5), who asserts that "in the future, nobody can talk about the theory of teaching or the philosophy of teaching without the notion of dialogue". Dialogue and language are closely intertwined. Both are and will always be dialogic.

If dialogue is our first cornerstone, then another stone was provided by Kumar (1995, 3) when he argued that in an information-rich and knowledge-intensive society the most important feature will most probably consist of *theoretical knowledge*, which is likely to serve at the same time as a source of value and a source of growth to every human being. These two cornerstones—dialogue and theoretical knowledge—have made it easy for us to realise that—in teacher education, in media education and in foreign language education—we ought to *encourage our students to adopt a more scientific approach to their learning processes*. To put this in another way, we cite Hammer's (1994) words: students should be encouraged to develop "habits and attitudes for inquiry" and to refine "reasoning practices and abilities" (cited in Morrison & Collins 1995, 40). This scientific approach should not be limited to teacher education or to foreign language education; rather, it should be applied to primary and secondary school levels as well, so that it could become a *Leitmotiv* for general school-going. As a consequence of these thoughts, we contend that an ethnographic approach could be employed as a learning method when using network-based learning approaches (NBL). The Internet is a good example of an environment in whose educational use different modes of thought can be practised.

Our third cornerstone—perhaps the most fundamental one—is *communication*. We understand that belonging to a certain culture and to a certain time and space—regardless of the independence of time and space technologywise—raises issues related to cross-cultural and interpersonal communication. We have discussed both human-to-human (face-to-face, interpersonal, "intermental") communication and mediated communication, especially computer-mediated human communication. As a result of our reflections, we have come to the conclusion that *understanding the main principles of dialogism are indispensable in order to be able to create a dialogic communication culture.* In this process of "appririating" some of the central characteristics of this kind of new communication culture, the comprehension of *the concept of dialogue is essential.* And all this is bound to lead to a new kind of conception of the learning environment we foster in our schools, teacher education departments and in our relations with present-day student teachers, our future colleagues in the teaching profession.

The influence of Vygotsky's zone of proximal development (ZPD) has been crucial to us and therefore it has been analysed in great detail from a number of perspectives, both pedagogical, cultural and technological. We now draw some conclusions about its adaptability to Finnish educational contexts. One of the most evident conclusions is the fact that *a fruitful dialogic learning environment calls for active teachers, active learners but also*—and this element is often forgotten—*an active and dialogic learning and communication environment.* It is only the synergy of these three factors—teacher, learner, environment—that is likely to lead to empowering learning and to a meaningful teaching–learning interaction. Contrary to some recent foci in learning and cognitive psychology, but of no surprise to cognitive educationalists or specialists in didactics, teacher education and media education, we argue that *paying full attention to the ZPD of Vygotsky emphasises* *the role of the teacher, and even more emphatically in a technology-rich learning environment.* These focuses also underscore the significance and relevance of the teaching profession, as more proficient adults or specialists in scaffolding and tutoring the learners are needed to first foster and then open up their independent potential, according to the premisses of the ZPD. One more factor could be added, namely the knowledge embedded in the learning process. These four factors could then be argued to *complete the fundamental communication process,* which, in the spirit of Tiffin & Rajasingham (1995, 24) can be *epitomised as education.*

If a question is put forward about how Vygotskian thinking and his zone of proximal development in particular could be taken into account in today's education and teaching, one way would be to think seriously about the following three principles as elaborated by Bruner (1985, 25–26) and based on Vygotskian transactional learning:

First, *it would be appropriate to use various "props" and "instruments" to make it possible for the child to go beyond his present "level of development" to achieve higher ground and eventually new consciousness and control.* In this perspective, the use of modern information and communication technologies is most relevant. As we see it, this kind of integration of mind ("intellectual tools") and tools ("technological tools") would very appositely illustrate Vygotsky's favourite motto *"Nec manus, nisi intellectus, sibi permissus, multam valent; instrumentis et auxilibus res perficitur"* (cited in Bruner 1985, 23. A rough translation would be: Neither the hand nor the mind alone, left to themselves, would amount to much. But the use of different tools and auxiliary devices will perfect them).

Second, *some specification is needed of the kinds of processes that make the child sensitive or receptive to vicarious or transactional learning.* According to Smagorinsky (1995, 197), Vygotsky underscored the "distinction between biological (lower) and socioculturally mediated (higher) mental processes, which provide the framework for a view of development in which biological factors provide the range of cognitive potential of a learner's ZPD … which then takes shape—becomes the individual's 'higher' mental processes—through the learner's use of mediational tools, which he or she uses to internalize the historical cultural means of mentation that characterize mental adaptation and transformation in the surrounding social milieu". In our view, this is related to our discussions of the role and significance of artifacts and artifactual communication in the conduct of everyday activities. Language, cultural models, discourse and, in the final analysis, dialogue itself, are embedded in these processes.

Third, *the more proficient partner (i.e., the teacher) should use certain procedures and transactions that ease the way for the intending (or even the initially unintending) learner.* Bruner (1985, 26) summarises these three components by saying that "it takes no particular imagination to see that the three, props, processes, and procedures, are at the heart of what we ordinarily think of as education–curriculum, learning, and teaching".

In light of this, the expanding use of modern technology is of utmost importance and clearly integrates ideas of transactional learning and the zone of proximal development with the learner's potential development as first scaffolded by a more proficient tutor as well as with the constructivist ideas of an active learner in constructing his or her own knowledge base.

Smagorinsky (1995, 204) has argued that *teaching always involves mediation, primarily in the form of instruction and assessment.* He uses instruction to refer to the provision of forms of mediation that involve students in problem-solving activities using appropriate cultural tools. When this concept is integrated to the principles of dialogism as presented in this publication, we start seeing a new kind of approach to the teaching–learning process, enriched with ideas of the learner's potential development when "scaffolded" through various stages of development, but also the growing importance of the teacher's—the tutor's, the parent's—role in this active and dynamic process of learning. This is quite a challenge to the teachers of the twenty-first century, as it is to the teachers and teacher educators of today.

9. THE RESEARCH PROJECT

9.1 Aims of the Study

This publication has dealt with some theoretical viewpoints on which we intend to conduct further research. The main purpose is to study how students' capacity to act as ethnographic researchers of their own work and their own learning enviroment can be increased and further developed by giving them new cultural artifacts or psychological and technological tools, while enhancing their telematic proficiency at the same time. By students we mean both pupils at the secondary school level (junior high school students) and student teachers of foreign languages. The question is, of course, of a complex change process which calls for much advance reflection. One way to study complex and qualitative changing processes is to use Vygotsky's "functional method with double stimulation". The method is commonly known as "Vygotsky's blocktest", a method he used to study children's conceptual thinking (Kozulin 1990, 137; cf. also Lindqvist 1995, 67).

Following Kramsch (1993a), we equally aim at an ethnographic approach to be used as a learning process and as a teaching method. An ethnographic approach lends itself quite easily to exploring foreign cultures by offering a model of inquiry that can be applied to FL classroom situations. This approach is even more relevant once we support it with computer-mediated human communication (CMHC) and specifically designed knowledge constructing environments. In an ethnographic approach, the learner, along with the teacher, becomes a researcher of his or her own culture and of the other culture as well. Our aim is to look for ways of implementing this approach in a foreign language classroom.

Our research project aims at upgrading the students' metacognitive level of awareness of their computer literacy. At the same time, we encourage students to adopt a kind of scientific approach to their learning processes and, on the other hand, to teaching by underlining the importance of scientific thinking even at the school level. Cognitive development is culturally-rooted and inseparable from the tools of mediation. We argue that a new kind of learning culture is about to be born. We cherish the idea of having an ethnographic approach as a learning method when using the WWW, for instance. An ethnographic approach is typical of exploring foreign cultures and it offers a model of inquiry that can be applied to classroom situations, especially when supported by computer-mediated communication and specifically designed dialogic knowledge management environments. The concept of dialogism is highly relevant in this research project.

9.2 The Pilot Study

The research project has been initiated with a pilot study made by Marja Mononen-Aaltonen in 1996, with an aim to know more about the learning environment as described by the students themselves. In the pilot study, the aim was to make the junior high school students more cognisant of their own learning environment. We emphasise the students' role as intelligent agents in the learning process. Therefore, they will be actively involved in our research project during the next stages as well, which will now focus on building a dialogic learning environment on the Web by using different types of network-based learning groupware.

Our purpose in conducting the pilot study was threefold. First, we wanted to know more about the foreign language learning environment as described by the students. Second, we wanted to make the students better aware of their own learning environment. Finally, we wanted to find out some of the needs that foreign language student teachers feel they have in modern information and communication technologies-focused and enriched learning environments.

The pilot study was conducted in an eighth grade classroom in one of our university training schools. The study also included all our foreign language student teachers and their supervisors in the two university training schools. The results of the pilot study are being analysed at the moment.

9.3 Focus on Dialogic Learning Environments

Generally speaking, in educational circles the emphasis so far has been mostly on information technology and on how to acquire skills in using MICT, rather than on communication. Our attempt is to change the viewpoint and to balance the situation by seeing technology as a means of communication, as a modern type of mediation between human beings capable of using modern technology, as culturally loaded artifacts. The emphasis has been on the technology and on how to acquire the MICT skills, more on information technology than on communication.

We will look for ways of encouraging the students' dialogic learning in classroom situations by making them aware of

(i) their potential as researchers in the teaching–learning process and in the teacher–learner interaction,

(ii) the potential of the technological and psychological tools for dialogic and intentional learning that the learning environment provides,

(iii) the potential of the mediational tools in shaping thinking and communication, and

(iv) the role of dialogue in learning, and in the modern networked world.

The target is to build a dialogic learning environment with its potential of dialogic experiences and to promote the students' competence to make full use of an ethnographic approach.

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The channels of communication do not change the fact that all human communication in essence is dialogic. Communication always also implies the beginning of the next move, either an answer or a question oriented towards the other human being (Bibler 1991, 99). It always carries in it the possibility of an answer, a question or—that of doubt.

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